Elettricità Evoluta
dal 1904
ave

Expandable and remote controlled Burglar alarm control panel

Cod. AF998EXP

C0463 07 03-02-2009

AF998EXP Expandable and remote controlled Burglar alarm control panel

INTRODUCTION Page 05

TECHNICAL SPECIFICATIONS Page 05
- Declaration of conformity

ARCHITECTURE AND SYSTEMS COMPONENTS Page 06

SYSTEM PERIPHERIALS Page 07
- AF983 LCD Keyboard
- Operation of AF983 keyboards
- AF45380 LED Keyboard
- AF339 Proximity electronic key and AF45343 decoder
- AFEX8I Expansion module with 8 inputs
- AFEX8I-RE Remote expansion with 8 inputs
- AFEX8U Remote expansion modulo with 8 output
- AFEX8I-RE and AFEX8U modules and AF983 keyboards connection methods
- AF907RR Radio expansion module
- Radio peripherals
- Programming radio peripherals with AF907RR radio receiver
- AF899B digital telephone dialler and AF899SV4 voice synthesizer board
- AF998SW and AFPC01 software and connection cable for programming and remote control

SLAVE AREAS Page 23
- Forced switch on

USER CODES AND SPECIAL CODES Page 24
- User codes priority levels (access codes)
- Default programming of the codes
- Modification default values of codes
- Assigned areas
- Associated outputs
- Associated telephone numbers
- Operation of special codes

DESCRIPTION AND PROGRAMMING OF INPUTS Page 28
- Type of connection
- Type of input
- Input status
- Normal or common input
- Association of inputs to areas
- Enabling buzzer function
- Self-exclusion counter
- Activation
- Report code and relative transmission channel
- Associated telephone numbers
- Associated output
- Input in “AND”
- Alpha-numeric message associated to input
- Modifying alpha-numeric message associated to input

DESCRIPTION AND PROGRAMMING OF OUTPUTS Page 33
- Type of output
- Activity of output
- Output Timer
- Output connection
- Available timers
- “Open door” signals
- Siren outputs

AUXILIARY FUNCTIONS Page 38
- Signalling status of power supply status (fuses)
- Signalling status of battery level
- Signalling power line failure
- Signalling status of WATCH-DOG
- Autotest

SPECIAL FUNCTIONS Page 40
- Self test range
- Battery test range
- Power failure delay
- Radio supervision range
- Failure output
- Control panel status at power ON
- Key operation
- TC output with control panel OFF
- Printer output
- Printer output ON/OFF
- Programming code
- Area times
- Temporarily excluded input restoration
- Alarm area output
- Decoder LEDs
- Keyboard messages

EVENTS MEMORY Page 42
- Viewing last events
- Viewing all events
- Print events
- Remote reading of the event memory

TEST FUNCTION Page 43
- Input Test
- Siren Test (alarm output)
- Tamper Test
- Battery Test
- Remote output Test
- Communications on telephone line test

INSTALLATION AND PROGRAMMING TELEPHONE DIALLER AF899B Page 46
- Installation
- Programming telephone numbers
- Telephone options
- Alarm events
- Use of the telephone dialler in bidirectional mode
- Voice synthesis board AF899SV4 and voice messages
- Installation and use of the module AFGSM02

CALENDAR Page 51
- Setting the weekly scheduler
- Setting holidays

TIME SCHEDULER Page 51
- Setting the programmes
- Extension
- Daylight saving time
- Blocking the time scheduler functions

PROGRAMMING THE CONTROL PANEL USING THE P.C. Page 54
- Setting the connection modes and parameters
- Local connection
- Remote connection using the telephone modem

DEFAULT (FACTORY SET) PROGRAM AND CONTROL PANEL RESET Page 56
- Resetting the default code values
- Default values of parameters
- Resetting the default parameter values

PROGRAMMING THE CONTROL PANEL USING THE KEYBOARD Page 60

INSTALLATION EXAMPLES Page 60
- Factory with apartment
- Two-family house

USER MANUAL Page 63
- Introduction
- Inserting the system using keyboard AF983
- Checking open inputs and temporary exclusion of inputs through keyboard AF983
- Disconnecting the system using the keyboard AF983
- Inserting, disconnecting and partial inserting the system using the keyboard AF45380
- Inserting, disconnecting and partial inserting the system using proximity key AF339
- Silencing the alarms
- Viewing the last events memory
- Modifying the user code

APPENDIX
- **Internal view and connections** Page 69

WARNING The products must be sold in their original packaging, if this is not done then the dealer and/or installer must apply and transmit to the user all the instructions for the use of the product which normally accompany the product. After having opened the packaging ensure that the apparatus is whole, if there is a doubt do not use the apparatus and consult qualified professionals. Even if packaged, the apparatus must be handled with care and stored in a dry place at temperatures between –5…+40°C.

Furthermore please remember: • The 5-year guarantee applies for faults and non conformities in products due to manufacturing error, all rights and obligations resulting from laws in force remaining firm (arts. 1490, 1512 C.C., DL 24/2002, Directive 1999/44/CE, art. 1519 C.C.). The fault must be declared within two months from discovery thereof. Five years are understood as running from the time of delivery of the product by AVE. • The AVE products are for installation purposes. They must be installed by qualified staff in compliance with systems regulations. • Remove power by switching off the general switch before undertaking any work on the system. • Take special care in preparing the cable terminals that must be inserted into the terminals of the apparatus in order to avoid reducing the insulation distances between one and the other. • Tighten the screws of the terminals carefully to avoid overheating that could cause fire or damage the cables. • The product is designed for use in dry, non dusty environments. For specific environments use specific products. • There is the danger of electric shock or malfunction if the apparatus is tampered with. • Install products and accessories according to the specifications in the catalogue and the appropriate instructions sheets, and in conformity with specific rules and regulations

INTRODUCTION

AF998EXP is a fully programmable and expandable burglar alarm control panel. It has 8 basic inputs expandable to 16 connecting the expansion board AFEX8 internally to the control panel. Through an appropriate bus line it is possible to connect two remote expansion modules AFEX8I-RE, taking the total number of inputs managed by the system to 32. Furthermore connecting the radio expansion module AF907RR the control panel dialogues with other 64 radio devices that can be identified individually. In the same way the 8 outputs on board can be extended to 32 always connecting the three AFEX8U remote expansion modules via bus. The control panel can run up to 8 keyboards AF983 and 64 programmable access codes. The inputs can be grouped into 8 individually programmed areas. The area can be programmed to run outputs, access codes, keyboards and decoders for electronic keys. This allows managing the system according to programmable access hierarchies to the various areas.

The control panel has a standard, factory-set programme (default programme), which can be used in the majority of systems. Modifications to programmes aimed at customising the basic system according to a client's requirements can be made using the keyboard or an appropriate programme installed on the P.C., connected to the serial port RS232 planned for on board the station through the cable AFPC01.

The AF899B board (two-way modem/telephone dialler) allows activating through a remote, tele-managed device and therefore programme the system from a remote, together with the transmission of alarms on a telephone line changed to digital. Lastly, inserting the voice synthesis card AF899SV4 alarms can be transmitted also vocally.

The control panel AF998EXP, thanks to the flexibility of the modularity and the range of peripherals, is the ideal solution for sophisticated residential systems, average type industrial systems and all those areas that require specific access logic.

TECHNICAL SPECIFICATIONS

- 8 basic programmable inputs such as: instantaneous, delayed, 24H, chime, fire, assistance, attack, silent alarm, entry route, memory, key, programmer control, switch on.
- Possibility of expanding to 16 inputs with AFEX8I card connected centrally
- Possibility of expanding to 32 inputs with N. 2 remote modules cod. AFEX8I-RE of 8 inputs each
- Possibility of expanding to 96 inputs with 64 radio using the receiver AF907RR.
- 1 input type 24h for tamper alarm
- 8 basic programmable outputs
- Possibility of expanding to 32 outputs with N. 3 remote modules AFEX8U with 8 outputs each
- Possibility of managing up to 8 independent areas
- Up to 8 keyboards AF983 and/or AF45380
- Up to 64 access codes at various priority levels
- Usable with electronic proximity key AF339 and AF45343 decoder
- Can be connected, through serial port RS232 to a PC for programming operations
- Tele-management with appropriate card AF899B equipped with HAYES interface
- Completed with battery AF912 and at least one keyboard AF983

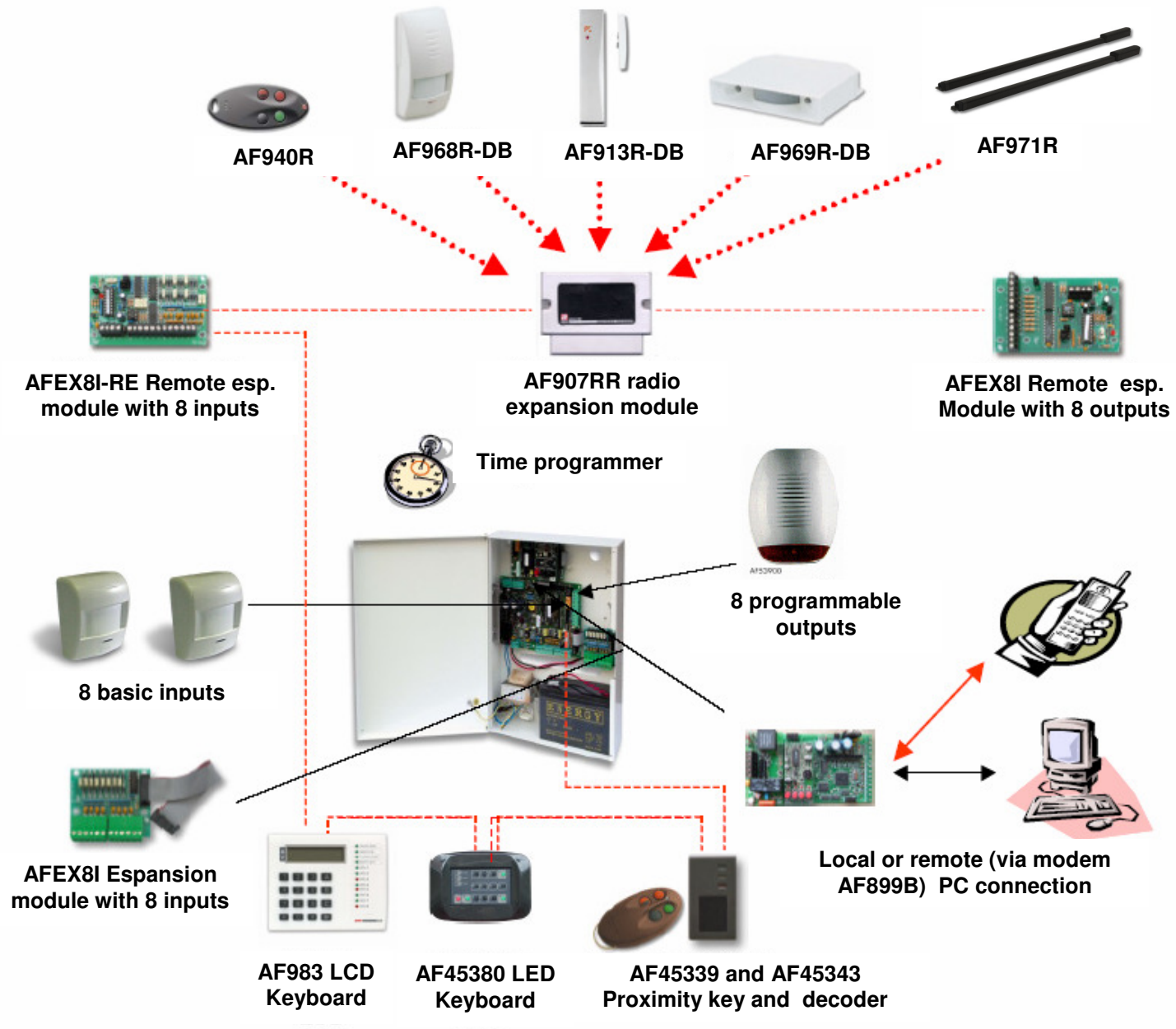
Declaration of conformity

The AF9998EXP control panel and relative wire-connected peripherals conform to the following regulations: EN 61000-6-3, EN 50130-4, EN 60950, CEI 79-2 2° lev. (after programming relative parameters)

All radio systems conform to the necessary requirements and other pertinent regulations established in the directive 199/5/CE

The AF899B telephone dialler for the PSTN part conforms to regulation: TBR21

ARCHITECTURE AND SYSTEM COMPONENTS



SYSTEM PERIPHERALS

AF983 LCD keyboard

The control panel AF9998EXP can accept up to 8 keyboards (totally amongst the various models available), connected through the bus RS 485. For the connection methods and lengths of various cables, see what is stated in paragraph “Ways of connecting the modules AFEX8I and AFEX8U and keyboards AF983”.

The LCD keyboards have a rear-lit display with 32 characters on two lines and 12 LED with the following functions:

LED	ON	OFF	FLASHING
Ready	All inputs are closed (not in alarm)	One or more inputs are in alarm during the output time	
Inserted	System inserted totally	System disconnected	System inserted partially
Alarm		Operation normal	Alarm received
Faulty	Technical fault: absence of mains faulty fuse flat or faulty battery	Operation normal	
Area 1- 8	Area inserted and associated inputs closed	Area not inserted	During the output time this shows that one or more inputs (in the same area) are open. The central station inserted indicates that an alarm has occurred in the area

and 16 keys divided as follows:

0…9 **numbers keys**
***** **key confirming operations**
# **key cancelling operations or cancel**
A, B,C,D **operations key. They have various meanings, described below**

Pressing the key is accompanied by an effective tactile effect and a short sound from the buzzer in the keyboard. From the keyboard it is possible to:

- deactivate the buzzer alone (on each keyboard), pressing keys D and 0 at the same time. Pressing again these keys the buzzer will be reactivated.
- regulate the contrast of the LCD display, keeping key D pressed and pressing A or B

Ways of programming the keyboards AF983

The programming of the keyboards is divided into two phases:

1. one keyboard must be programmed as keyboard N.° 1 and all the others are initially programmed as keyboard N.° 16
2. all the keyboards (except N.° 1) are assigned progressive addresses.

In order to programme the keyboards it is important that at least one keyboard with an address 1, is connected to the control panel. All the keyboards have a factory setting 16. It is possible to take the keyboard to address 1 by pressing the following keys at the same time:

*** 0 #**

until the wording: **"KEYBOARD 01"** appears on the display

If more than one keyboard with address 1 is connected, there is a conflict that prevents the correct operation of the control panel, it is necessary for the other keyboards to have different addresses.

Should it be necessary to take a keyboard to the factory address (16), for some seconds press the following keys at the same time:

*** 5 #**

until the wording: "KEYBOARD 16" appears on the display

Even when it is necessary to change the address assigned to a keyboard, first return its address to 16 using the procedure described above (*** 5 #**).

To programme the operating address for a new keyboard it is necessary for the keyboard to have address16, be correctly connected to the bus of the central station and the following procedure must be followed:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by C and D keys the **KEYBOARDS** menu and confirm by the Key *;
3. on the display of the keyboard on which one is operating the wording " **KEYBOARD 02** " appears indicating which keyboard can be programmed;
4. In the case where a different keyboard must be programmed, use the keys C and D to select the keyboard that must be programmed and press * to confirm;
5. the display of the keyboard on which one is operating shows the wording " **KEY 02 AR. 1 NO** " that indicates the association of area 1 to the selected keyboard;
6. use the keys C and D to change (NO = area not associated to the keyboard, YES = area associated) then press * to pass to the association of the next area;
7. carry out the operations seen for area 1 also for the next areas;
8. at the end, confirming the association with the last area, the control panel seeks to dialogue with the selected keyboard;
9. the control panel checks whether there is a Keyboard 2, programmed previously, and then views " **KEYBOARD 02 OK PRESS A KEY** " while the leds on the interrogated keyboard flash and the display shows the wording " **KEYBOARD 02 OK** " , then press the key # on the keyboard on which one is operating and pass to point 12 to programme other keyboards;
10. on the other hand, if there isn't a keyboard 2, programmed previously ,the display of the keyboard on which one is operating will show the wording " **PRESS * E #** " .
11. Then press the following keys at the same time:

    *** #**

    on the keyboard that must be assigned the address 02, until the address has been accepted and it acts as described in previous point 9;
12. Repeat programming from point 3 for all the keyboards that must be programmed.

N.B.: the AF983 keyboard includes an anti-tampering microswitch on board to detect any removal attempts. In order to use the tamper alarm signal, it is required for each keyboard installed to remove the jumper placed on the keyboard card near the microswitch and to set the alarm signal through the appropriate option in the keyboard menù of the program AF998EXP or through keyboard programming in the special function menù.

Programming the system using the program AF998SW it is possible to select the following options:

PARAMETER	SET VALUES	PRE-SET VALUE	DESCRIPTION
Keyboard tamper alarm	NO , YES	NO	If this function is selected as NO, the control panel does not signal the tamper alarm even if the keyboard is completely disconnected. In any event the status of the control panel DOES NOT CHANGE in view of the connection of the keyboard to the control panel station.
Keyboards Buzzer en/ex	NO , YES	NO	If this function is selected as NO the keyboard does not use its buzzer to signal insertion/disconnection of the system during the entry time and the exit time respectively.
Keyboards buzzer alarm	NO , YES	NO	If the function is selected as NO the keyboard does not use its buzzer to signal the condition of alarm.

Operation of AF983 keyboards

The AF983 keyboards can freely accept the 8 areas that the control panel can operate, contributing to establishing the limits in access to the user codes with level 5 priority (see paragraph on USER CODES AND SPECIAL CODES).

User codes with priority level 6 can operate on all the areas assigned to them regardless of the area assigned to the keyboard on which they have been entered.

On the other hand user codes with priority level 5 can operate only on those areas coinciding with those the ones assigned to the keyboard on which they are entered.

AF45380 LED keyboard

The AF9998EXP control panel can support up to 8 keyboards (total amongst the various models available), connected by bus RS 485. As regards the connection methods and lengths of various cables, please see what is stated in the paragraph “Methods of connecting modules AFEX8I and AFEX8U and AF983 keyboards”. The keyboard AF45380 has 3 LEDs with the following functions

LED	ON	OFF	FLASHING
Area 1	Area inserted and associated inputs closed	Area not inserted	One or more inputs associated to the area are open during output time, or there is an alarm in the area.
Area 2			
Area 3			

and 14 keys divided as follows:

0…9 numbers key
*** key confirming operations**
 # key annulling or cancelling operations
A, ◂ functions keys. With various meanings, described below

Pressing the key is accompanied by an effective tactile effect and a short sound from the buzzer in the keyboard. It is possible to deactivate the individual buzzer on each keyboard by pressing ◂ and 0 at the same time. Press the same keys again to re-insert buzzer operation.

To proceed with programming it is necessary to have already installed a AF983 keyboard with address 1. Proceed as follows:

All the keyboards leave the factory with address 16. Should it be necessary to return a keyboard to the factory setting (16), press the following at the same time for a few seconds:

*** 5 #**

Until a beep sounds to confirm the operation.

Even when it is necessary to change the address assigned to a keyboard it is necessary to first return the address to 16 using the procedure described above (keys * 5 #).

To programme an operative address for a new keyboard it is necessary for it to be correctly connected to the control panel bus and that the following procedure be followed:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming.
2. select by C and D keys the **KEYBOARDS** menu and confirm by the Key *;
3. the wording " **KEYBOARD 02** " appears on the display indicating which keyboard can be programmed;
4. should you wish to programme a different keyboard, use keys C and D to select the keyboard that must be programmed and press * to confirm;
5. the keyboard display will show " **KEYB 02 AR. 1 NO** " which means the association of area 1 to the keyboard selected;
6. use keys C and D to modify (NO = area not associated to the keyboard, YES = area associated) then the key * to pass to an association for the next area;
7. the operations mentioned for area 1 can also be used for areas 2 and 3;
8. at the end confirming the association with the last area, the control panel will seek to dialogue with the selected keyboard;
9. the control panel checks whether there is keyboard 2, programmed previously, and then views " **KEYBOARD 02 OK PRESS A KEY** " while the leds on the interrogated keyboard will flash; press # on the keyboard and pass to point 12 to programme other keyboards;
10. on the other hand, if there isn't a keyboard 2, programmed previously, the display will show the wording " **PRESS * AND #** "
11. press the following keys at the same time:

    *** #**

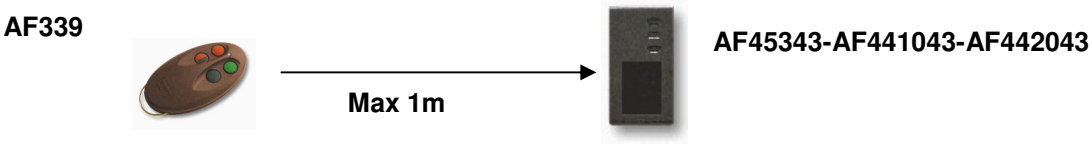
    On the keyboard to which address 02 must be assigned, until this accepts the address and replies behaving as described in point 9;
12. repeat programming from point 3 for all the keyboards that must be programmed.

N.B.: All the AF45380 keyboards connected to the control panel are automatically matched to the first three areas associated with the code. It is possible to limit access only to one or two areas appropriately programming the parameters linked to the codes. Furthermore if the code has all the areas associated the keyboard inserts and disconnects all the areas, with the possibility of shuttering only the first three areas.

For further operative details concerning the use of the system see the user manual.

AF339 Proximity electronic key and AF45343 decoder

The IR AF339 ray electronic proximity key and relative AF45343 decoder inserting, disconnecting and partial inserting the system.



Programming is in two phases:

1. Assignment to all decoders their own operating address (AF45343 decoders have no factory setting).
2. Transfer of one of the 8 user codes, which the control panel runs, from the control panel to the AF339 key.

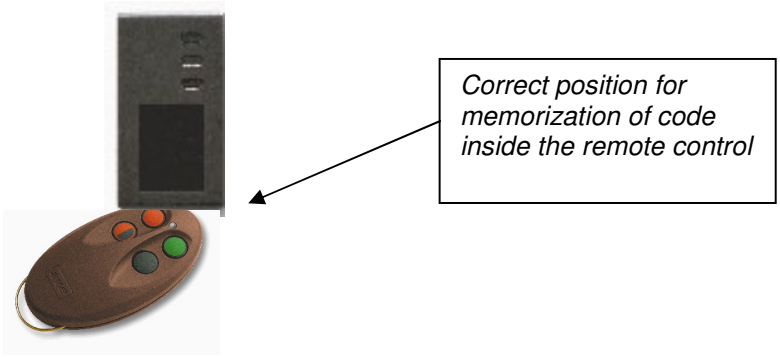
To assign the address to the connector proceed as follows:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by C and D keys **DECODERS** menu and confirm by the key *:
3. the control panel suggests the first Decoder (N.1);
4. enable the decoder to the areas of competence (preferably the same areas of competence as the code see note 1);
5. the control panel checks whether there is a Decoder N. 1, programmed previously, and then views "CONNECTOR 1 OK" and the leds of the decoder will flash. On the other hand, if this has not yet been programmed the wording will be “PRESS A BUTTON” of the AF339 key near the Decoder to which address N.1 is to be assigned:
6. press the button of the AF339 key (any button) until the three leds of the Decoder flash showing that the programming has come about, the central station views “DECODER 1 OK” showing that the address has been assigned;
7. if, on the other hand, after about one minute there is no affirmative result, the display will show an error message;
8. the operation described must be done for all the decoders that are installed;

N.B.: in order for the proximity key to work correctly, give it only a level 5 code.

Before transferring the level 5 code to the electronic key, it is necessary to programme the user codes into the control panel, follow the procedure described in the relative paragraph, then continue as follows:

1. digit a priority 8 user code (default 123456) on a keyboard AF983 already programmed and then enter the technical code (default 222222) to enter programming;
2. on the keyboard digit code 999999;
3. the LCD display shows the wording “CODE “;
4. digit the user code to be transferred to the key (eg. User code n° 2, level 5, if this consists of less than 6 numbers confirm with key “ * ”);
5. the display shows the wording “CODE → KEY” and simultaneously all the leds of connector N.° 1 will start to flash at the same time, indicating that the control panel station is able to transfer the codes to the key;
6. press the 4 buttons of the AF339 key at the same time until the leds of the key begin to flash indicating that it is able to accept the code;
7. move the key near until it comes into contact with Decoder N.° 1, as shown in the figure below, keeping the red button near the lower corner of the Decoder . When the led on the key remains on then the selected code has been transferred to the key;
8. the display will show the wording “ ***EXECUTED*** “, indicating that the code transfer operation to the key has been undertaken correctly;
9. a few seconds later the leds on the Decoder will switch off and the control panel activities will resume, the display will show the situation prior to when code 999999 was entered.



If the operation transferring the code to the key was not successful, it will be necessary to repeat all the operations starting from point 1.

If more copies of keys are required with the same code it is necessary to repeat the operations for each of the keys, starting from the beginning. Modification of a user code will annul the keys associated to it. Each key can memorise up to 8 different codes, with 8 different systems. Each system can be identified using dipswitches 1, 2 and 3 located on the control panel mother board.

During normal operations the key buttons has the following meanings:

KEY	FUNCTION
RED	**Total insertion of all the areas managed by the code (on/off step by step)**
GREEN	**Insertion 1st area managed by the code**
BLACK	**Insertion 2nd area managed by the code**
BLACK/RED	**Insertion 3rd area managed by the code**

Note 1: in order to have the leds from one decoder corresponding to the first three areas of the code associated with the key, it is advisable to associate the same areas as the decoder to the code.

During exit time the three leds of the decoder will view the state of the first three areas of competence of itself; selecting the option “STATUS OF THE AREAS” , in the special functions menu, this condition remains even after the exit time has ended.

Selecting the option “STATUS OF THE SYSTEM”, once the output time has ended the leds will view the status of the system as shown below:

LED	ON	FLASHING	OFF
GREEN	**System totally on**	**System partially inserted**	**System disconnected**
YELLOW	**Faulty Feed Voltage**	**-**	**-**
RED	**-**	**Alarm**	**-**

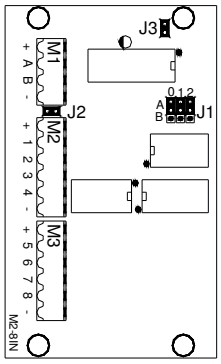
AFEX8I Expansion module with 8 inputs

This module allows expanding to 16 the programmable inputs available in the control panel. The inputs can be configured individually as NC, NO, SINGLE or DUAL BALANCING (alarm and tamper on two wires) and are filtered and protected against electrical and electrostatic discharges. As shown in the appendix “Internal view and connections”, it is connected through the cable supplied with the connector EXP3 (CN1).

AFEX8I-RE Remote expansion module with 8 inputs

It is possible to connect up to two AFEX8I-RE modules, on bus RS485 falling directly under the terminal board M4 of the mother board, allowing an extension of the programmable inputs to 32; each input can be configured as NC (normally closed), NO (normally open), SINGLE or DUAL BALANCING (alarm and tamper on two wires) and is filtered and protected against electrical and electrostatic discharges.

As shown in the figure, each module has its own address to be set using the bridges J1 (0-1-2). The modules must be set as follows:

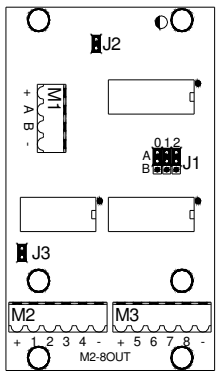


J1 POSITIONS			MODULE SETTINGS
0	1	2	
B	A	B	Inputs from 17 to 24
A	A	B	Inputs from 25 to 32

The J3 jumper must be always inserted. The J2 bridge, if inserted, connects the power supply positive +12V to the terminals + of the M2 and M3 terminal boards.

AFEX8U remote expansion modules with 8 outputs

It is possible to connect up to 3 AFEX8U modules to terminal board M4 of the mother board allowing an extension of programmable outputs, open collector type, to 32 (this type of output closes towards the negative when it activates. Max 50mA). Like the input modules, each output module has its own address that must be set using the bridges J1 (0-1-2), as shown below. The modules must be set as follows:



J1 POSITIONS			MODULE SETTINGS
0	1	2	
A	B	B	Outputs from 9 to 16
B	A	B	Outputs from 17 to 24
A	A	B	Outputs from 25 to 32

The J2 jumper must always be inserted. The J3 jumper, if inserted, connects the power supply positive +12V to the terminals + of the M2 and M3 terminal boards.

AFEX8I-RE and AFEX8U and the AF983 keyboards connection methods

The maximum overall connection distance of modules and keyboards with the control panel is approximately 1.000 meters. In small building, i.e. 130-150m it is possible to use a normal cable for burglar alarm (2x0,5 for connection and 2x0,25 mm2 for the signal), and make sure to connect the shield only to the negative of the power supply in the control panel.

Greater distances, up to 1.000 m, can be reached complying with the following conditions:

- No losses, excepting only those due to the connection cable, must influence communication. Therefore the use of a twisted and shielded cable is recommended with a minimum section of 0,5 mm2 (example: a screened telephone cable or cable type NEC AFA02250/3T2, 39 ohm/Km at 20°C). A twisted pair must be used for connecting power supply (+ -) while the other twisted pair must be used to connect the signals (A B). This cable must not be interrupted and must not have any intermediate joints. Intermediate modules must be connected simply by removing the insulation from the cable and inserting it through a slot into the appropriate terminal. The shield must be connected to the negative of the power supply in the control panel.

- In order for the modules to function, minimum feed voltage must be 11 V. In order to guarantee this, for distances exceeding 200 m it is advisable to use remote feeds (with relative buffer battery) to feed the detectors or loads connected to the modules.

- Using the remote power supply to supply modules AFEX8I-RE and AFEX8U, the negative pole must be connected to terminals "-" in module terminal boards M1, M2, M3, while the positive pole must be connected to terminals "+" in module terminal boards M2 and M3 taking care to open the jumper J2 for AFEX8I-RE and J3 for AFEX8U positioned near the terminal board M2 in each case.

NB: the A.M mode to connect remote power supply (open the jumper J2 for AFEX8I-RE and J3 for AFEX8U) must be always followed, even when it is necessary to use additional power supply, due to high current consumption, with distances less than 150m.

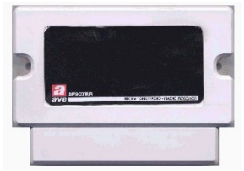
AF907RR Radio expansion module

AF907RR is a radio expansion module that allows the control panel to dialogue with all the peripherals of the radio range. There are 64 available radio channels that can be freely associated to the inputs from the control panel, from position 33 to position 96. Each channel can be programmed with the typical input parameters. It is possible to connect up to 8 radio expansion modules in order to be as close as possible to the devices and improve the quality of the transmission.

The radio expansion module has an antiscanner function, able to generate al alarm or failure signal even when there is a disturbance between transmitters and receivers.

N.B.: There are 64 channels regardless of whether one or more AF907RR modules are connected at the control panel.

The module has the following technical characteristics



- Feed from bus RS485.
- 64 radio channels
- Field meter with LED on board
- LED indicating correct bus communication.

Connecting the receiver on the bus RS485 the following functions can be obtained:

- **Insert– disconnect buzzer.** The operations for the insertion, disconnection and partial insertion of the system can be undertaken using the remote control AF940R, properly memorised.

- **Receipt of alarm from radio detectors.** Memorising the radio detectors, as stated below, it is possible to send intruder and tamper alarms to the control panel, from the detectors themselves.

- **Scanner Alarm.** The device has a particular circuit that can detect an attempt at tempering, undertaken through a scanner. The circuit signals an alarm when it intercepts an attempt to reconstruct the code normally sent by the remote control, or when a fixed carrier is transmitted.

N.B.: The function must be enabled during installation. The condition of scanner alarm is signalled as “24h alarm”.

- **Supervision alarm (detector malfunction)** the detectors transmit a presence signal every 25 minutes. Every 8 hours the control panel checks, by the radio expansion module, reception. If the “presence” signal is absent the control panel signals a condition of supervision alarm as a technical alarm, in order to direct the calls properly.

- **Detector Tests** The AF998EXP central station allows carrying out input tests without this causing alarms to be signalled, allowing a keyboard display to view this and the sounding of a buzzer on the same. To enter input tests (see chapter on “TEST FUNCTIONS”) . It is also possible to check the radio connection range of the radio devices in the transmissions through the radio expansion module Leds.

To install the AF907RR radio expansion module proceed as follows:

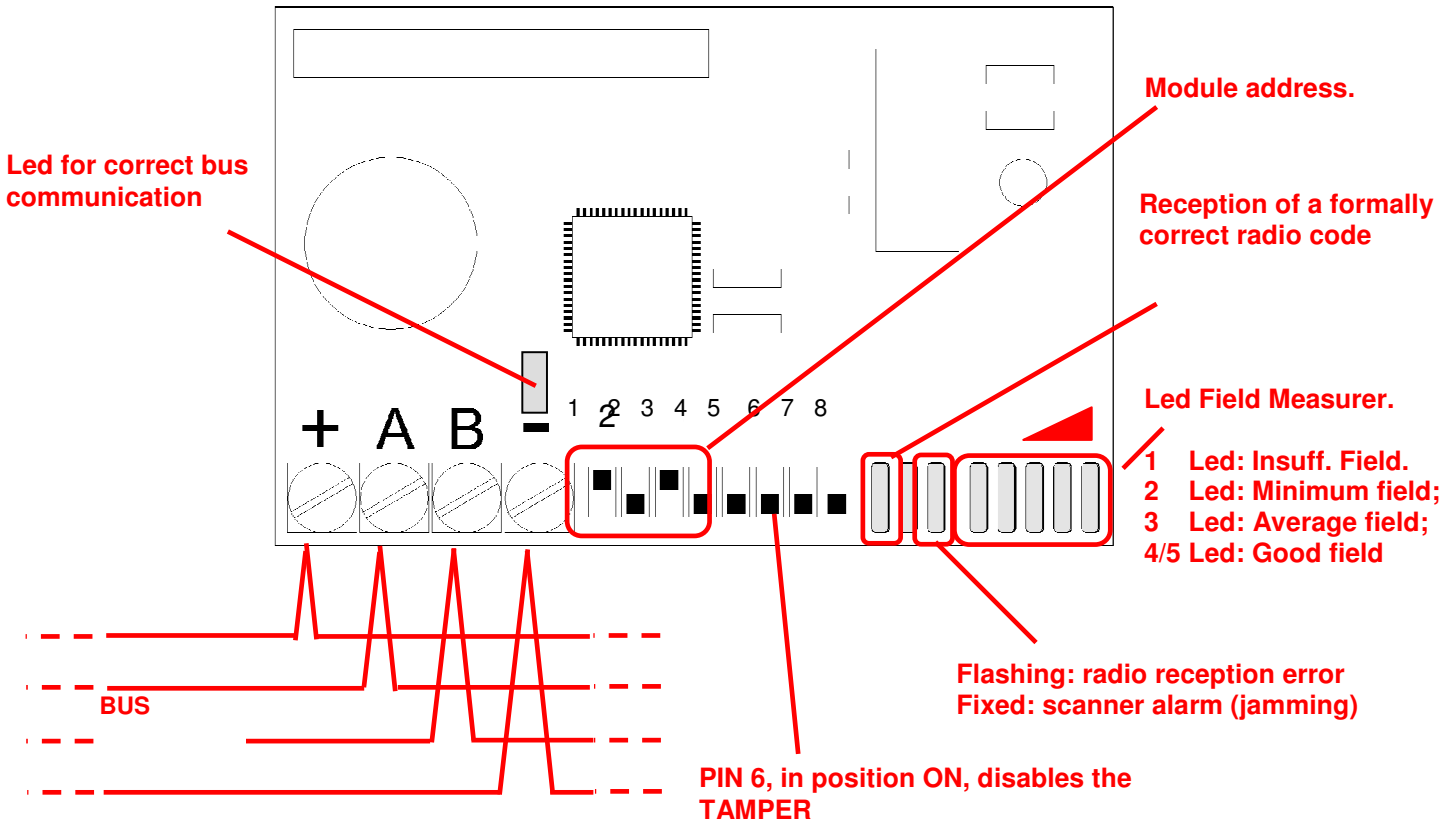
1. with the control panel not supplied connect the radio expansion module to BUS RS485 and assign an address using the dipswitch;

Dip1	Dip2	Dip3	Dip4	RECEIVER address
ON	ON	ON	ON	1
OFF	ON	ON	ON	2
ON	OFF	ON	ON	3
OFF	OFF	ON	ON	4
ON	ON	OFF	ON	5
OFF	ON	OFF	ON	6
ON	OFF	OFF	ON	7
OFF	OFF	OFF	ON	8

2. connect power to the control panel and enter a priority 8 user code (default 123456) on an AF983 keyboard and then enter t the technical code (default 222222) to enter programming;
3. select by C and D keys the **RADIO MODULE** menu and confirm by the key *;
4. the keyboard display will show the wording **MOD. RADIO 01 NO;**
5. If the radio expansion module with address 01 is connected press key C to modify the parameter to YES and confirm with *;
6. the keyboard display will show the wording **MOD. RADIO 02 NO**;
7. repeat the previous procedure, bearing in mind that YES or NO must be set on the basis of the address of the module.

Eg: Module 1 connected = **MOD. RADIO 01 YES**, Module 2 not connected = **MOD. RADIO 02 NO**.

8. the procedure will be repeated 8 times, at the end of which the keyboard display will show the wording JAMMING NO, set YES to activate the antiscanner function and confirm with * (use this function only in case of absence of radio transmitters or radio repeaters nearby);
9. if the installation has been successful the bus communication led on each AF907RR module will flash.

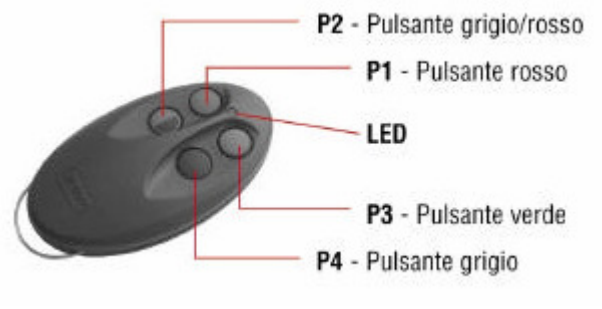

Led for correct bus communication
Module address.
Reception of a formally correct radio code
Led Field Measurer.
1 Led: Insuff. Field.
2 Led: Minimum field;
3 Led: Average field;
4/5 Led: Good field
+ A B -
1 2 3 4 5 6 7 8
BUS
Flashing: radio reception error
Fixed: scanner alarm (jamming)
PIN 6, in position ON, disables the TAMPER

Radio peripherals

(AF940R Remote control, AF968R-DB PIR Detector, AF913R-DB Multifunction perimetric detector, AF969R-DB external PIR detector, AF971R IR Barrier)

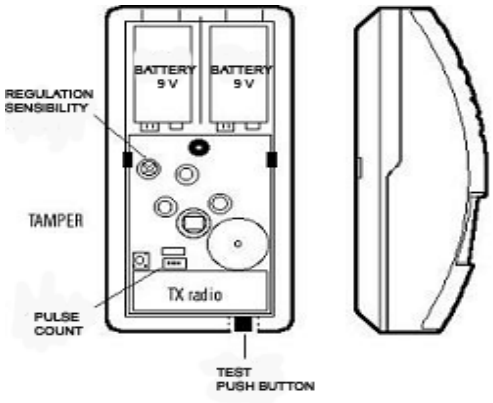
The AF940R remote control, shown in the figure, presents the following technical characteristics:

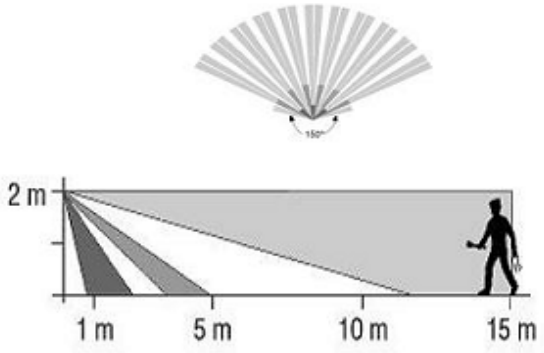
- Power supply: two 3V Lithium batteries type CR2016.
- Current consumption: 20mA in transmission.
- Battery life expectancy: minimum 6 months.
- Buttons/channels: 4.
- R.F. characteristics: A.F. quartz transmission. at 433,92 MHZ power max 10mW.
- Signal coding: 36 bit random code, over 68 billion combinations.
- Connection range: over 40 m in free air.; approx 30 m. in residential environments.
- Dimensions: (70 x 36 x 13) mm.



The AF968R-DB detector, shown in the figure present the following technical characteristics: ,

- Power supply: one or two 9 V alcaline batteries – type GP1604A.
- Electrical input: 14µA in standby - 80 mA in transmission.
- Maximum duration: 18 months with alcaline battery, 36 months with two.
- Local signal (beep) flat battery and transmission of the same to the control panel.
- Positioning: fixing to the wall, better if at an angle, at a height of 2-2,30 m.
- Protected area: opening 100° for a 12m range - 20 sensitive beams on 3 floors, over 80m$^{2.}$
- Sensitivity: adjustabel with trimmer from 30 to 100%.
- Allarm detector: programmable pulse counter: 1 or 3 (selection by jumper).
- Temperature autocompensation.
- Send signal of presence (supervision) and of flat battery every 22 minutes.
- Autoprotection against opening and detachment of detector.
- Test: visualization of movement detector via LED for 2 minutes after pressing the button.
- Connection range: 100m in free air and in the complete absence of disturbances on the band, it can be considerably reduced indoors due to the position in relation to the structure of the room and/or disturbances on the radio waves. Always check the radio range with a suitable test.
- Dimensions: (132x65x46) mm.
- Operating temperature: from 0°C to +50°C.
- Dual Band radio transmission.





It operates as follows:

- After 3 minutes from connection to the battery (see paragraph on “programming”), the detector is ready to work. When it detects motion it generates a transmission from the alarm. To reduce battery consumption, after the alarm there is a block lasting 2 minutes.

N.B.: In rest conditions, the LED is always off; it comes on only when the detector is in alarm or in test conditions.

- **Test.** To test whether there is coverage, it is necessary to place the detector in a test condition. To access this function for two minutes use a screwdriver to press the test button on the lower side of the detector cover: the alarm viewing led switches on and block detector function is excluded (for 2 minutes) following the alarm. The entry of the test function is signalled by a “beep”.

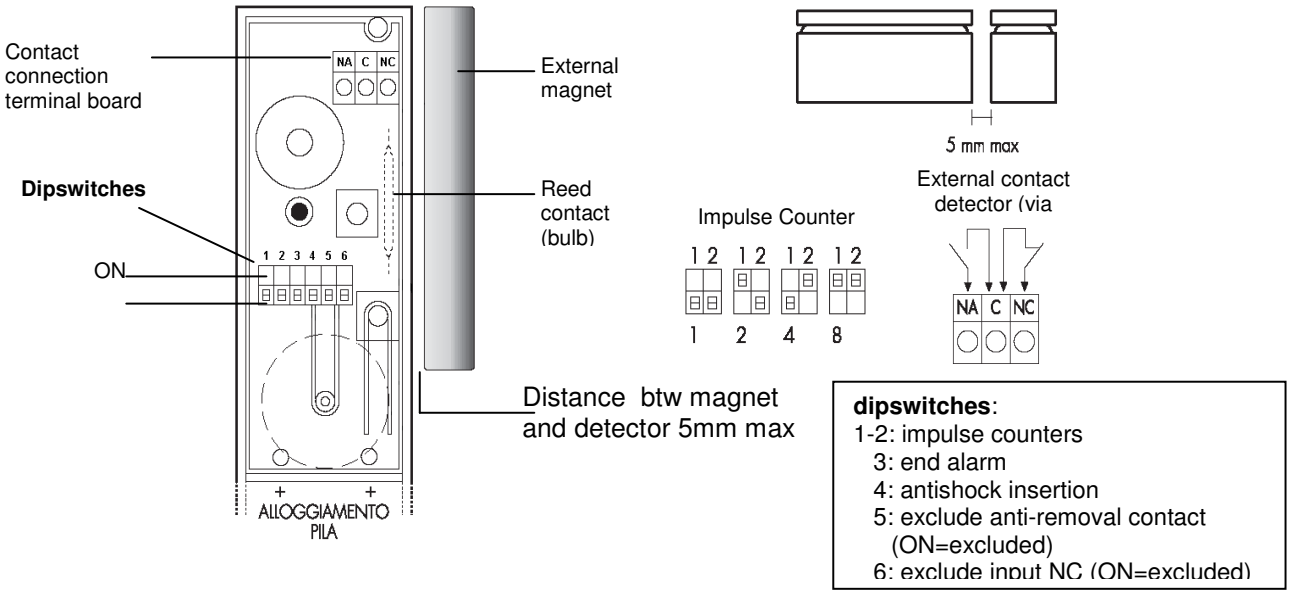
At this point adjust sensitivity to the minimum needed by turning the trimmer positioned on the upper left of the electronic card, and in the case of disturbed areas move the “impulse counter” bridge to position 3 (alarm after about three pitches).

- **Tamper Alarm.** At any time, opening the apparatus container will result in the transmission of a tamper alarm.

- **Flat battery alarm.** The need to replace the battery is signalled by 3 ”beeps”, given by the detector (at each alarm transmission) as well as signalling “Fault” shown on the display, at least one month before it runs down completely.

The AF913R-DB detector, shown in the figure, have the following technical characteristics:

- Power supply: alkaline battery 9V – type GP1604A.
- Absorption: 13µA in stand-by - 80 mA in transmission.
- Autonomy: with alkaline battery 18-24 months.
- Local signals (beep) low battery and transmission of the same to the control panel.
- Operative functions:
  - door open signal
  - door closed signal
  - shock alarm (attempted break in)
  - alarm with pulse counter (for external connection of intertia detectors)
  - technical alarm (for external connection of technical detectors)
- Send signal of presence (supervision) and flat battery every 20 minutes.
- Radio capacity: 100m free air and in the complete absence of disturbances on the band, it can be considerably reduced indoors due to the position in relation to the structure of the room and/or disturbances on the radio waves. Always check the radio range with a suitable test.
- Dimensions: (135x32x27) mm.
- Operating Temperature: from 0°C to +50°C.
- Dual band radio transmission.



It operates as follows:

- The detector AF913R-DB can be used in various operative functions, selected using the relative dipswitches. As shown in fig. it has an internal reed contact (with bulb) activated by an external magnet, supplied, to be installed to protect doors or windows. In this case the magnet must be installed on the door or window to be protected and the detector on the frame. With the door closed, as shown in the fig. the distance between the detector and the magnet cannot exceed 5 mm. Moving the magnet away from the detector, the reed relay opens its contact generating the alarm that will be transmitted to the control panel. Moving the magnet near the detector once again, the control panel will receive the end alarm signal that will annul the alarm condition. **The micro switch 3, that signals the end of the alarm, must always be ON.**

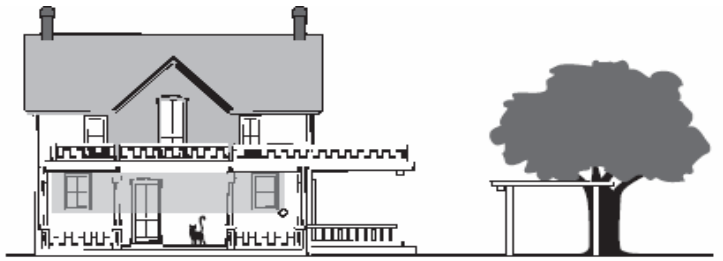
- There is an internal antishock device made using a piezoelectric device that will generate an alarm in case of violent impact, transmitted to the control panel. This function can only be excluded with micro switch 4. The detector AF913R-DB also allows transmitting the status of an externally connected NA or NC contact to the control panel. Therefore properly connecting, as shown in the above reported picture, the output contact of any type of detector, the control panel can receive the relative alarm signal. Dipswitch 1 and 2 (pulse counter) allows establishing (only for input N.C.) the number of local alarms after which the alarm is transmitted to the control panel.

N.B.: The NC input must be enabled through dipswitch 6. If the NC input is not used dipswitch 6 must be positioned on “on”. It is possible to use the input NC and the magnet at the same time in order to simultaneously check the opening of a window and the movement of the relative shutter, the alarm will be generated either by the opening of the window or the movement of the shutter.

- **Tamper alarm.** At any time, opening the apparatus container will result in the transmission of a tamper alarm through the relative micro switch. A second micro switch, located on the back of the card, will allow the detector to also transmit the removal alarm. The removal alarm can be activated or deactivated using dipswitch 5.

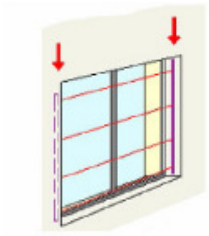
- **Flat battery Alarm.** The need to replace the battery is signalled by 3 ”beeps”, given by the detector (at each alarm transmission) as well as signalling “Fault” shown on the display, at least one month before it runs down completely.

AF969R-DB is an IR-P detector made in order to be installed inside or outside a home. Thanks to a “curtain” lens it is possible to offer a perimeter protection. As shown in the installation example the detector can be installed with all its relative recommendations, to protect the external perimeter of the home. It has a device against blinding, an obstacle positioned in front of the detector is identified and generates a Tamper alarm. As for all radio detectors in the range it has a supervisory function. For further information please refer to the manual included in the package of the product.



There is a flat battery signal sent by the detector to the central station. Here the display will show the signal “Fault”.

AF971R is an infrared ray barrier to protect doors and windows with radio transmission of the alarm. As shown in the figure, it consists of two devices (master and slave) located in two plastic profiles and fed by alkaline batteries. A barrier is generated between the two elements, with four invisible and modulated infrared rays. Breaking one or more rays, depending on the configuration set by the user, will lead to a transmission of an alarm by radio. For further information please refer to the manual included in the package of the product.



Programming radio peripherals with receiver AF907RR

To programme the remote controls it is important to consider that the 4 channels of the remote control AF940R, correspond to the 4 buttons on board, and are run from the control panel as single inputs. Therefore for each channel it is possible to programme parameters typical of inputs. To use a remote control button to insert, disconnect or partial insert, use the following procedure:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by C and D keys the menu **INPUTS** and confirm by the key *;
3. use **C** or **D** to select the radio input to programme, from 33 to 96. (Press **A,** the input increases by 10 press **B** it decreases by 10).

    - Set the entry type **SWITCH ON.**
    - Enter status as **INSERTED**.
    - Choose the type of radio channel **CH1** or **CH2**

N.B.: set **CH1** if you wish to memorise a radio channel coming from the **GREEN**, **RED** or **BLACK-RED** buttons of the remote control. Set **CH2** if you wish to memorise a radio channel coming from the **BLACK** button of the remote control. **This button in a learning phase, must be pressed for more than 10" seconds.**

    - Confirm the areas managed by the button setting them as **YES.**
    - Set the parameter of the input as **MEM AL+RI**.

N.B.: MEM AL: Inserts (On) - MEM RI: Disconnects (Off) - MEM AL+RI: Inserts and Disconnects (Step by step).

4. When these parameters are entered in the keyboard display the writing **LEARNING** will appear**.** Press ***** to continue learning the radio code.

N.B.: if you wish to modify only the settings of the input press # in order not to have to learn the radio code again.

5. At this point the keyboard display will show the wording **PROGRAMMING** press the button of the channel that must be memorised;
6. If the control panel has memorised the code, the display will show the wording **OK PRESS*.** Press *****.
7. At this point the control panel will ask whether the input is supervised or not. Set as not supervised ("NOT SUPERV.").

Programmed in this way, the button inserts and disconnects the associated areas.

N.B.: if the control panel is programmed through the PC the radio codes must be memorised with this procedure.

Similarly, to memorize the detector radio codes it is necessary to place the control panel in condition to learn the code, as stated below:

1. digit a priority 8 user code (default 123456) on a AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by C and D keys the menu **INPUTS** and confirm by the key *;.
3. Use **C** or **D** to select the radio input to programme, from 33 to 96. (Press **A,** the input increases by 10 press **B** it decreases by 10).

    - Set the type of input.
    - Set status as **INSERTED** .
    - Choose the type of radio channel **CH1**
    - Confirm the areas to which the radio input belongs.

4. When these parameters are entered in the keyboard display the writing **LEARNING** will appear**.** Press ***** to continue learning the radio code.

N.B.: if you wish to modify only the settings of the input press # in order not to have to learn the radio code again.

5. At this point the keyboard display will show the wording **PROGRAMMING.** Memorise the detector code using the following procedure:

    - supply the detector (IRP AF968R, detector AF913R, detector IRP for outdoors AF968R, Barrier IR AF971R) by inserting a suitable battery. At the first time the detector transmits its own code for 30s. The control panel will memorise the detector code.

6. If the control panel has memorised the code, the keyboard display will show the wording **OK PRESS *.** Press *.
7. At this point the control panel will ask whether the input is or is not supervised.
8. Finish programming the input parameters.

N.B.: If the programming of the control panel is undertaken through the PC the radio codes must nonetheless be memorised using this procedure.

AF899B digital telephone dialler and AF899SV4 voice synthesizer board

The control panel AF899EXP can support a two way digital telephone dialler AF899B that allows telephone alarm signals along a PSTN line to tele-surveillance centres, and to connect with centres equipped for tele-management services. Te use of the AF899SV4 voice synthesizer board allows sending 4 freely programmable voice messages. For the programming and use of the telephone sequence switch and the voice synthesis card please see the relevant paragraphs in this manual.

AF998SW and AFPC01 software and connection cable for programming and remote control

The control panel station has a standard, factory-set, programming, in order to be used with the majority of systems. The changes to the programme aimed at customising the system on the basis of specific need can be done using the keyboard AF983 or using special programme AF998SW installed on a personal computer, connected to the port RS232, designed on board the control panel, using the cable AFPC01 (see paragraphs “Programming the parameters of the central station using the PC and “Programming the default values of the parameters”.

SLAVE AREAS

As mentioned in the introduction, the AF998EXP control panel can run 8 areas independent one from the other, to which inputs are freely assigned.

In some applications it is necessary to be able to make conditional the inserted/disconnected status of an area from the status of other areas. The area conditioned (SLAVE) by the status of other areas is not run by the user but automatically falls under the status of the areas that condition it and namely if all the areas that condition the slave area are inserted, then the slave area is also inserted.
On the other hand, if at least one area that conditions the slave area is disconnected, then also the slave area is disconnected.

For each of the 8 areas it is possible to freely programme if it depends on other areas or not by being very careful that a slave area does not condition the status of other areas.

Furthermore when running the codes the slave areas cannot be run by user codes as this could result in conflict.

In the default programme no area is slave to any other area.

The need to use slave areas arises when common areas must be managed, such as the entrance stairway in a building with 2 apartments. In this case the stairway is a slave of the area relating to the two apartments and therefore only when both apartments are protected will the slave area also be protected.

Forced switch on

If this function is selected as NO, and in the total or partial insertion phase of the system one or more inputs are open (in alarm), the exit time blocks and does not progress. The output time resumes the count from the beginning when all the inputs are closed (not in alarm) allowing the total or partial insertion of the system. On the other hand, if YES is selected the output time is NOT blocked even if one or more inputs are open (in alarm) and at the end of this time the system will switch on.

Clearly if at the end of the output time all the inputs concerned are not in a close input condition (not in alarm) then an alarm will be generated.

USER CODES AND SPECIAL CODES

The AF998EXP control panel can run 64 USER CODES, i.e. access codes and 10 SPECIAL CODES.

N.B.: the user codes and special codes are freely programmable only through the keyboard.

For each user code it is possible to programme four important parameters:

- Priority level associated to the code
- area of relevance
- associated output;
- associated telephone call.

User code priority level of the (access code)

Each user code (also called ACCESS CODE) is associated with a priority level, from amongst 8 available, that defines the operational level allowed. **The hierarchical structure is ascending (minimum level = priority 1, maximum level = priority 8)** and an upper level including all the operational factors of levels below it. The operational factors tied to the priority levels, are stated in the following table:

HIERARCHICAL LEVEL	DESCRIPTION
8	This code allows the operator to insert and disconnect the entire system and permits the acceptance of the MASTER code (code 33, default 111111).
7	This code allows the operator to insert and disconnect the entire system and permits the acceptance of the TECHNICAL code (code 34, default 222222).
6	This code allows the operator to manage the system according to the areas programmed independently from the keyboard used.
5	This code allows the operator to manage the system according to the areas programmed together with the keyboard used
4	This code allows the operator only to insert the system according to the programmed areas together with the keyboard used.
3	This code allows the operator to only silence the alarms
2	This code allows the operator only to view the events memory
1	This code is used only to memorise the event (passage of patrol etc.) and can activate an output

The upper level includes all the operational factors of levels below it.

N.B.: at least one user code must maintain priority level 8 to allow access to programming of control panel parameters and other unused user codes.

All USER CODES can activate a telephone call and a programmable output to be used as an anti-constraint type signal.

Default programming of the codes

The factory set codes are the following

CODE	FUNCTION	VALUE	PRIORITY
01	USER CODE 01	123456	8
02..64	USER CODE 02….64	----------	6
65	MASTER CODE	111111	---
66	ADVANCED PROGRAMMING CODE (Technical code)	222222	---
67	SIMPLIFIED PROGRAMMING AND TEST CODE	333333	---
68	TELEPHONE CALL	444444	---
69	PC PROGRAMMING	555555	---
70	MODIFICATION TELEPHONE NUMBER 8	888888 FIXED	---
71	MODIFICATION OF OWN USER CODE	000000 FIXED	---
72	TRANSFER OF CODE FROM CONTROL PANEL TO AF339	999999 FIXED	---

Modification default values of codes

It is possible to modify the default values of all the codes; this operation, done when the control panel is disconnected, requires the following procedure:

1. with the control panel disconnected, digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the MASTER CODE (default 111111): the LCD display shows the wording **CODE**;
2. enter the code reference number (01...40) that must be reprogrammed, followed by the key * to confirm;
3. the display will show the wording " CODE XX =" where XX indicates the reference number entered;
4. enter the new code that must be set, (each code can have 4, 5, or 6 numbers) and confirm by entering *;

N.B.: to abandon the code modification procedure, press #.

5. The LCD display can show the following :

Code accepted	Indicates that the inserted code has been accepted and replaces the previous one
Incorrect code	Indicates that the procedure followed is correct but the code has not been modified because there is another code with the same numbers or the code has not been accepted because the procedure has not been carried out correctly

6. the code modifying procedure starts again from point 4.

N.B.: the MASTER code can modify all the codes (including the master code itself).

IMPORTANT: all the operations enabled by entering a valid code must be started within one minute after having entered the code itself.

It is possible to take all the codes to the default values using the procedure indicated in the relevant paragraph in the section "Programming default".

Assigned areas

Each USER CODE can be freely associated to the 8 areas that allow managing the partial insert of the system. Each USER CODE with priority 5 and 6 can therefore run only the areas associated thereto. For the management of the system using the codes, please see the user manual.

Associated Output

Each USER CODE can be associated with a programmable remote output that will be activated each time the code is entered. The programmable value falls between 0 and 32 (0 = no output associated).
N.B.: the same output can be associated to more than one USER CODE.

The output associated to the user codes must be programmed to be the impulse type with activation delay time and release delay time both equal to 0.

As the activities of programmable outputs can be selected depending on the status of the control panel, programming will also involve the operation of the outputs associated to the user codes.

N.B.: outputs associated to access codes and inputs at the same time, cannot be used.

Associated telephone numbers

Each USER CODE can be associated to telephone calls. If programmed, each time a code is entered a telephone notification will be sent to the telephone numbers set.

Operation of the special codes

Special codes and their operation are listed below:

NAME	CODE TO BE ENTERED	DESCRIPTION
Master	**111111**	Accepted only if the system if totally disconnected and if previously enabled by entering a USER CODE with priority level 8. **It is the only code that permits varying all other codes.**
Advanced programming code (Technical code)	**222222**	Accepted only if the system if totally disconnected and if previously enabled by entering a USER CODE with priority level 7 or 8. Allows accessing the advanced programming of all parameters and all the functions of the control panel, as described below.
Simplified programming and test code	**333333**	Accepted only if the system if totally disconnected and if previously enabled by entering a USER CODE with priority level 7 or 8. Allows accessing the simplified programming of some parameters and some functions of the control panel, as described below.
Telephone call	**444444**	Accepted only if the system if totally disconnected and if previously enabled by entering a USER CODE with priority level 8. Sends a telephone call to telephone number 9 (technical number), allowing remote download operations of the events memory and the remote programming of the control panel through a telephone modem.
Control panel programming	**555555**	Accepted only if the system if totally disconnected and if previously enabled by entering a USER CODE with priority level 8. Allows programming the control panel through a direct connection to a Personal Computer. This code must coincide with the remote programming code of programme AF998SW in order for the control panel parameters to be programmed through the personal computer.
Modification telephone number 8	**888888**	Accepted only after having entered a valid code with priority level greater than 4. Used for the “Follow me” function.
Programming key	**999999**	Allows transferring from the control panel to proximity key AF339 of the desired USER CODE
Modifying own code	**000000**	Is accepted with the system disconnected and allows modifying one’s own USER CODE

N.B.: entering the technical code (default 222222) inhibits the central station tamper for approximately 60 seconds, in order to allow the control panel to be opened for technical work without causing alarms.

DESCRIPTION AND PROGRAMMING OF INPUTS

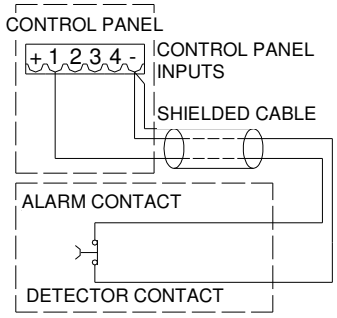
The programming phase for each input provides for the setting of the following configuration parameters.

1. Type of connection
2. Type of input
3. Status of the input
4. Normal or Common
5. association of the inputs to the areas
6. enabling buzzer function
7. self-exclusion count
8. activation
9. report code and relative transmission channel (for telephone calls to surveillance or telemanagement centres)
10. associated telephone calls
11. associated outputs
12. inputs in AND
13. alphanumerical message associated with the input
14. modify alphanumerical message associated with the input

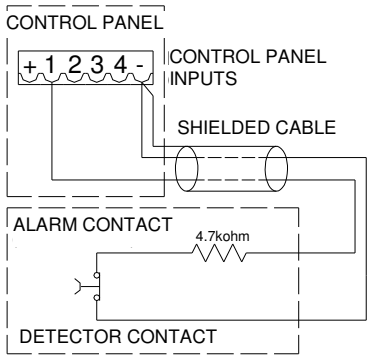
Type of connection

All the inputs of the AF998EXP control panel can be programmed individually as a normally closed type (NC), normally open (NO), SINGLE or DOUBLE BALANCING.

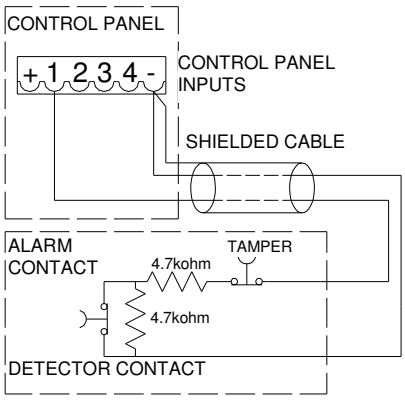
The various types of connection are illustrated below:



Connection diagram between one NA or NC input and a detector



Connection diagram between a single balancing input and a detector



Connection diagram between a dual balancing input and a detector

N.B.: the dual balancing connection allows the control panel to identify separately the intruder alarm and the tamper alarm on two wires, of which one is the negative of the power supply.

Type of input

The choice of the type of input can be made choosing from among the following options:

TYPE	DESCRIPTION
Instantaneous	Typical anti-intruder input, active with the control panel inserted and not active with the control panel disconnected. When there is an alarm it activates a GENERAL ALARM relay output, the continuous sound of the buzzer and switching on of the alarm LED on the keyboards. The alarm telephone call to the associated telephone numbers is activated.
Delayed 1	Input active only with the control panel inserted. If open the ENTRY TIME 1 is started, during which a valid code must be entered to disconnect the control panel; during this time a continuous buzzer will sound. If the control panel is not disconnected the exit relay GENERAL ALARM will be activated and the alarm LED on the keyboards will light up. The alarm telephone call will be sent to the telephone numbers associated with the input.
Delayed 2	Input similar to the previous one with the difference that ENTRY TIME 2 is started. Alarm activations are the same as for type DELAYED 1.
24 Hours	Instant input active with the control panel inserted and with the control panel disconnected. Its opening activates the output 24 HOUR ALARM (by default it coincides with the general alarm relay of the card and can be changed by programming), the continuous sound of the buzzer (for the duration of the 24H alarm) and the switching on the alarm LED on the keyboards. The alarm telephone call will be sent to the telephone numbers associated with the input.
Fire	Instant input active with the control panel inserted and with the control panel disconnected. Its opening activates the output FIRE ALARM (by default it coincides with the general alarm relay of the card and can be changed by programming), the continuous sound of the buzzer (for the duration of the fire alarm) and the switching on the alarm LED on the keyboards. The alarm telephone call will be sent to the telephone numbers associated with the input.
Aid alarm	Instant input active with the control panel inserted and with the control panel disconnected. Its opening activates the continuous sound of the buzzer and the visual signalling of the alarm on the keyboards. The alarm telephone call will be sent to the telephone numbers associated with the input.
Aggression alarm	Instant input active with the control panel inserted and with the control panel disconnected. Its opening activates the GENERAL ALARM relay and the intermittent sound of the buzzer (for the duration of the GENERAL ALARM) and the visual signalling of the alarm on the keyboards. The alarm telephone call will be sent to the telephone numbers associated with the input.
Silent alarm	Input active with the central station inserted and with the central station disconnected. **No alarm output is activated and no sound or visual signal is heard or seen on the keyboards.** The alarm telephone call will be sent to the telephone numbers associated with the input.
Entry route	Instant input active with the control panel inserted. It behaves like a delayed input only in the case in which a DELAYED 1 or DELAYED 2 type input has already been opened. It behaves like an instant input in all other situations. The alarm telephone call will be sent to the telephone numbers associated with the input. Useful for connecting the detectors located between the entrance door and the keyboard.
Memory	Input active with the control panel inserted. If it is closed (balanced) at the end of the output time, it behaves like a normal instant-type input. On the other hand if at the end of the output time it is open, (unbalanced) **IT IS IGNORED UNTIL IT IS CLOSED**. From then it behaves like a normal instant-type input. The alarm telephone call will be sent to the telephone numbers associated with the input.

TYPE	DESCRIPTION
Chime	DELAYED 2 input active with control panel inserted, allows the keyboard buzzer to sound with the central station disconnected. If open with the control panel inserted, it activates the GENERAL ALARM relay, the continuous sound of the buzzer and switching on of the alarm LED on the keyboards. The alarm telephone call will be sent to the telephone numbers associated with the input. With the control panel disconnected, if the CHIME function is active (BELL ON), when the input is open it will activate the keyboard buzzers for a time of about 3 seconds.
Auxiliary	Instant input active with the control panel inserted and with the control panel disconnected. Its opening activates the output AUXILIARY ALARM (by default it coincides with the general alarm relay of the card and can be changed by programming), the continuous sound of the buzzer (for the duration of the 24H alarm) and the switching on the alarm LED on the keyboards. The alarm telephone call will be sent to the telephone numbers associated with the input.
Key	Instant input active with the control panel inserted and with the control panel disconnected. If unbalanced n**o visual or acoustic signal is activated.** If programmed, the event is memorised The telephone call will be sent to the telephone numbers associated with the input. Useful for conditioning the inputs associated thereto in "AND" configuration when a mechanical key must be used.
Time scheduler	Input active with the control panel inserted and with the control panel disconnected. If in alarm it blocks all the time programmer functions.
Switching ON/OFF	Input used to fully switch on/off the control panel or to activate/disactivate areas. The way this input operates is established by the programming of parameters as shown in the Table below.

N.B.

- The items in brackets indicate how the input is indicated if programmed from the keyboard rather than from the pc.
- All the inputs inserted must be associated to at least one area.

Switching ON/OFF input operation depending on assigned parameter

ASSIGNED PARAMETER	OPERATION
Impulsive NC (Alarm)	Opening the input the control panel or the areas assigned to the input change status on/off in step by step mode
Impulsive NO (Reset)	Closing the input the control panel or areas assigned to the input change status on/off in step by step mode
Bistable (All.+Reset)	Input close switches off the control panel of areas assigned to the input. Input open switches on the control panel of areas assigned to the input
None (No Memory)	Not valid

The total switching off or shut down of the system through a SWITCH ON type input simulates the centering of a priority code 8 and blocks telephone calls (if the parameter STOP COMUNIC. OF TELEPHONE OPTIONS is programmed properly, see relative paragraph).

Input status

Each input can take on one of the following status :

TYPE	DESCRIPTION
Excluded	In this state the input is always inactive independently from the state of the control panel. Even the relative tamper alarm signal is deactivated.
Inserted	The input is active according to the modes established by the TYPE programmed (see relative paragraph). In this state, alarm conditions the local alarm outputs are activated, and telephone calls, optical signals and the event is memorised.
Test	The input is active according to the modes established by the TYPE programmed (see relative paragraph). In this state, in case of alarm **the local alarm outputs are not activated,** while optical signals and telephone calls remain active, and the event is memorised.

Normal or Common Input

Each input can be set Normal or Common.

If a NORMAL-type input is associated with more than one area it will be active even if only one of them is active, while if a COMMON-type input is associated with more than one area it will be active if all of them are active.

Association of inputs to areas

Each input can be associated to one or more of the 8 AREAS into which the system can be organised. As indicated in the user manual at the time of insertion each area can be inserted or not. Resulting in a partial connection of the system.

It is advisable to associate each input of the NORMAL type to one area only in order to reach maximum simplicity and flexibility in the management of the system.

Enabling buzzer function

This setting allows choosing whether the input will activate the keyboards buzzer sound.

Self-exclusion counter

It is possible to indicate a number of alarm conditions in the input after which, should there be repeated alarms from the same input, this will temporarily self-exclude itself until the central station switches off or the areas to which the input belongs become disconnected.

A number from 0 to 10 can be set for each input, bearing in mind that condition 0 means that the self-exclusion function is not active.

Activation

For each input it is possible to memorise in the events memory the alarm condition and a reset of normal conditions. The possible choices are:

None	No condition of the input is memorised in events memory
Alarm	The status of ALARM of the input is memorised in the events memory
Reset	The RESET from alarm conditions is memorised in the events memory
Alarm + Reset	Both the ALARM and RESET conditions are memorised in the events memory

N.B.: as the telephone calls keep a record of the contents of the events memory, on the basis of how the signals for each input have been selected, if the telephone numbers to call have been properly selected for the inputs, then there can be telephone calls in the case of alarms and/or in the case of reset of the alarm of the input itself.

Report Code and relative transmission channel

They must be set in accordance with the codes necessary for the correct identification by the Surveillance Company receiving stations, in order to identify the type of alarm.

These codes can have the following values: 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F.

Associated telephone numbers

The telephone number to be associated to the input must be inserted. There are 8 available numbers. If one or more numbers are associated, in the case of opening of the input a telephone call is sent to the associated numbers.

Associated outputs

It is possible to associate the activation of one of the 32 programmable outputs to each input, this will change in relation to the variation in input status depending on the programming of the following options:

Always	The output associated to the programmed NORMAL type input is always controlled when the input is active, and then when at least one of the areas to which it is associated is inserted, when the input is deactivated and then when all the areas to which it is associated are disconnected. If the input has been programmed of a COMMON type the output associated to the input is always commanded, whether the input is active, and all the areas to which it is associated are inserted, or when the input is deactivated and therefore when at least one of the areas to which it is associated is disconnected.
ON	The output associated to the input is controlled only when the input is active.
OFF	The output associated to the input is controlled only when the input is deactivated.

The choice 00 indicates that no output is associated to the input while selecting a number between 01 and 32 establishes which output is associated to the input.

N.B.: be careful to associate existing outputs as the control panel does not check the presence of outputs at the time of programming. The same output can be associated to more than one input, while each input can be associated to one single output.

Input in "AND"

It is possible to establish that an input causes an alarm only if another input is found in the same state of alarm at the same time. This condition, defined as "AND" condition, links the selected input activation to the state of another input.

The choice 00 indicates that no input is in "AND" with the one being programmed while selecting a number from 01 to 32 establishes which input is in "AND" with the one being programmed.

N.B.: associate existing inputs as the control panel does not check the presence of inputs at the time of programming.

Each input can be in "AND" with another input, clearly different from it, and more than one input can be in "AND" with the same input. In this situation, the latter becomes an "enable input" for the activation of inputs in "AND".

N.B.: no AND conditions are managed in cascade among various inputs (example: an input in AND with another which is in AND with a third).

Alphanumerical message associated to the input

Each input can be associated to a 16-character alphanumerical message chosen from among 32 programmable messages.
The message associated to the input will appear in the print-out of events, signals of local and remote alarms, when viewing/printing the contents of the events memory.

The choice 00 indicates that no message is associated with the input being programmed while selecting a number from 01 to 32 establishes which message is associated to the input being programmed.

N.B.: It is possible to associate the same message to various inputs, while each input is associated with only one message; furthermore, for a better identification of the input it is advisable that in the string of 16 characters making up the message there is also the number that identifies the input.

Modifying the alphanumerical message associated with the input

To vary the message from the keyboard on the LCD panel:

1. digit a priority 8 code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by the C and D keys the **IMPUT** menu and confirm by the key *;
3. enter the relative function and confirm by the key *;
4. use keyboard buttons **C** and **D** to select the message to be modified
5. when the message has been selected, enter the message editing function with the key ***;** the display views the programmed message and the cursor will position itself at the end of the message.
6. to modify the message act on each letter that makes it up, using the following buttons:

#	Moves the cursor to the left by one space
*	Moves the cursor to the right by one space
C	Changes the character where the cursor is positioned following the sequence of proposed characters in increasing order
D	Changes the character where the cursor is positioned following the sequence of proposed characters in decreasing order

7. To confirm the entire message move the cursor to the last character on the right of the message with the key * and confirm the entire message by pressing the key ***.**

DESCRIPTION AND PROGRAMMING OF OUTPUTS

The control panel AF998EXP has 8 basic outputs connected by the connector CN4 (for connection to this connector there is a special cable available on request). With three external modules AFEX8U it can manage up to 32 outputs type OPEN COLLECTOR (this type of open collector type output closet towards the negative in activation conditions. Max 50mA). The activation of the single output is associated to different conditions such as:

- entering an access code;
- alarm of an input (alarm/reset);
- signalling of a failure;
- general alarm;
- 24 hour alarm;
- fire alarm;
- auxiliary alarm
- buzzer activation;
- system ON/OFF;
- inputs excluded
- system ready
- TC output (system status)

For each output the following configuration parameters can be programmed:

- type of output;
- activity;
- timer.

N.B.: The first 8 outputs are available on the connector CN4 of the central station AF998EXP, the other 24 are available connecting three remote output modules AFEX8U.

Type of output

Each output can be programmed as follows:

Bistable	Its activity follows the progress of the state of the input to which it is associated. The output is activated when the associated input is OPEN. If an INSERTION DELAY time has been set that is different to zero, the input opening starts this time during which the output remains inactive. At the end of the INSERTION DELAY time, if the input is still open the output activates and remains active until the input returns to a closed condition. If a RELEASE DELAY time has been set that is different to zero, the closure of the input makes this time start during which the output still remains active. At the end of the RELEASE DELAY, if the input is close, the output is deactivated.
Monostable (impulsive)	Its activity follows the progress of the state of the input to which it is associated but, differing from the stable type, it generates an impulse of a desired time. The INSERTION DELAY TIME must be programmed and the ACTIVATION TIME. The output is activated when the input is OPEN or when entering a code to which it is associated. If an INSERTION DELAY time has been set that is different to zero, the input opening starts this time during which the output remains inactive. At the end of the INSERTION DELAY time, if the input is still open the output activates for the programmed ACTIVATION TIME, then it deactivates automatically.

N.B.: Access codes can only be associated to impulsive type outputs with insertion delay times equal to zero.

Activity of output

Each programmable output can operate with negative safety (default) or with positive safety.

As the programmable outputs are the open collector type, connecting a relay (load) between the output and the positive feed terminal allows us to obtain a different function depending on whether the output is programmed with negative safety or positive safety, namely:

- Normally OFF: when the output is active the relay (load) is supplied so that it is energized, while when the output is not active the relay (load) it is not supplied and so it is not energised;
- Normally ON : when the output is active the relay (load) is not supplied so that it is not energized, while when the output is not active the relay (load) is supplied and so it is energised.

Normally ON (positive safety) outputs are used when the total absence of power supply (battery voltage and mains voltage 220 Vac) must cause the commutation of the output with the consequent de-energising of the applied load.

To select the operative mode for the output, choose from among the following options:

Negative (Normally OFF)	When active the load is supplied
Positive (Normally ON)	When active the load is not supplied

Output timers

The activity of a programmable output is regulated by three phases and namely :

- Insertion phase in which the passage comes about from deactivated to activated output;
- Activation phase in which the output is active;
- Release phase in which the passage comes about from activated to deactivated output.

The status of a programmable output (active output / deactive output) is determined by the following conditions :

- The state of the input or inputs to which this output is associated;
- or the digiting of an access code to which the output is associated.

For each output there are three times programmable that regulate the activation and deactivation phases of the output itself:

Insertion delay time	Period during which the output is inactive; this time is allowed to start, if the output is deactivated, each time the activation conditions occur, determined by the change of status of one of the inputs to which the output is associated. **If during this time the cause that led to the start of the activation phase, is reset, the output does not activate and the insertion delay time is set to zero.**
Activation time	Period during which the output is active; this time is allowed to start at the end of the activation phase and establishes how long the output will remain active even if, during this time, the cause that led to the activation of the output, is reset.
Release time	Period during which the output is active; this time is allowed to start, if the output is active, when the conditions that have determined the activation of the output itself, are reset. **If during this time the cause that led to the activation of the output, reoccurs, the output will remain active and the release delay time is set to zero.**

The three times can be set in the range 0...255 seconds with a precision of +/- 1 second.

Output connection

It is possible to establishes which open collector outputs is activated in case of the following events:

- general alarm;
- 24 hour alarm;
- fire alarm;
- auxiliary alarm
- buzzer activation;
- system ON/OFF;
- inputs excluded;
- system ready;
- TC output (system status).

Available timers

The AF998EXP control panel is able to manage 8 types of timers for each of the 8 available areas:

TIMES	SET VALUES	PRE-SET VALUE	DESCRIPTION
General alarm	0 – 255 s	180 s	During this time the following are active: - GENERAL ALARM RELAY with positive safety, which has 2 change over contacts on terminal board M8; - Any output programmed as general alarm (see SPECIAL FUNCTIONS).
24 hours alarm	0 – 255 s	180 s	The condition of 24 HOUR ALARM is determined by tampering with the system (TAMPER-type alarm) and the 24 HOUR-type input alarm. **N.B.: setting output 00 the 24 HOUR OUTPUT ALARM** (see SPECIAL FUNCTIONS). **Is automatically connected to the OUTPUT GENERAL ALARM.**
Fire alarm	0 – 255 s	180 s	The condition of FIRE ALARM is determined by the activation of FIRE-type inputs. **N.B.: setting output 00 the FIRE ALARM OUTPUT** see SPECIAL FUNCTIONS). **Is automatically connected to the OUTPUT GENERAL ALARM.**
Auxiliary alarm	0 – 255 s	180 s	The condition of AUXILIARY ALARM is determined by the activation of AUXILIARY-type inputs. **N.B.: setting output 00 the AUXILIARY ALARM OUTPUT** see SPECIAL FUNCTIONS). **Is automatically connected to the OUTPUT GENERAL ALARM.**
Buzzer alarm	0 – 255 s	0 s	The condition of BUZZER ALARM is determined by the activation of inputs that cause any type of alarm.
Output	0 – 255 s	20 s	During this time the control panel checks the condition of the inputs and signals any open inputs (open door signal). If all the inputs are ready to switch on the system this condition is signalled by: - a continuous sound of the keyboard buzzer; - the green led READY on the keyboards switches on. **The opening of an input during the OUTPUT TIME can block this OUTPUT TIME at its initial value.**
Entry 1	0 – 255 s	20 s	With the system inserted the opening of a DELAYED 1-type input activates the counting of ENTRY TIME 1. **During this time the control panel does not generate alarms if PASSAGE-type inputs or other DELAY 1 –type inputs are open.** **At the end of ENTRY TIME 1 a GENERAL ALARM is generated.** The system must therefore be DISCONNECTED within ENTRY TIME 1 in order not to cause an alarm. **If the input belongs to more areas the input time will be equal to the shortest input time of the associated areas.**

TIMES	SET VALUES	PRE-SET VALUE	DESCRIPTION
Entry 2	0 – 255 s	20 s	With the system inserted the opening of a DELAYED 2-type input activates the counting of ENTRY TIME 2 count. **During this time the control panel does not generate alarms if PASSAGE-type inputs or other DELAY 2 –type inputs are unbalanced. At the end of ENTRY TIME 2 a GENERAL ALARM is generated.** The system must therefore be DISCONNECTED within ENTRY TIME 2 in order not to cause an alarm. **If the input belongs to more areas the input time will be equal to the shortest input time of the associated areas.**

N.B.: the control panel precision in calculating the timing is +/- 1 unit of time.

"Open door" Signal

During the OUTPUT TIME the control panel checks the condition of the inputs and signals the situation of inputs open (OPEN DOOR SIGNAL). This signal comes about with:

- an intermittent buzzer sound from the keyboards;
- the green led corresponding to the area where the input is, will flash;
- the READY led on the keyboards is off;

N.B.: at the end of the OUTPUT TIME the system, or part of the system becomes active and every alarm is signalled. If more areas are inserted the output time will be the same as the longest output time of the areas inserted.

Siren outputs

The central station AF998EXP has a general alarm relay which has available two change over contacts NO, C, NC connected to with the terminals ALARM 1 and ALARM 2 of the terminal board M8.

The general alarm time is programmed in the function TIMES under the item GENERAL ALARM for each of the 8 areas. In this way it is possible to diversify this time on the basis of need.

N.B.: power supply outputs connected to the terminal board M8 are protected by a self-resetting fuse F7 that does not need to be replaced in case of short-circuit.

AUXILIARY FUNCTIONS

Similarly to what was mentioned for the inputs, memorisation and signalling conditions can be set that are both local and remote, for the following service events:

SERVICE EVENTS	PRESET VALUES
Fuses failure	No
Battery failure	No
Power line failure	No
Control panel watch dog	No
Control panel auto test	No

possible imitations are:

SETTING	DESCRIPTION
No memory	NO condition is memorised in the events memory; **in this case also the signals on the leds and keyboard displays are eliminated.**
Al. mem.	The status of MALFUNCTION/TEST is memorised in the events memory.
End al. mem.	RESETTING normal conditions is memorised in the events memory
Al+end al. mem.	Both conditions are memorised, i.e. ALARM and RESET
Report code and report channel	Necessary to send and identify the signal to the security company, if any
Telephone numbers	Necessary to identify the telephone numbers to which the signal must be sent.

N.B.: for the watch-dog and autotest the reset conditions have no significance.

Signalling status of power supply (fuses)

The AF998EXP control panel continuously verifies the status of the fuses and feed voltage that recharges the internal battery. The positive result of the test will not lead to any memorisation, if not the programmed activations will be considered (according to what was stated in the previous paragraph).

A table is given below that summarises the protections carried out by the fuses:

FUSE	PROTECTIONS
F1 3,15 A Delayed	**18 Vac Power supply**
F2 0,5 A Self-resetting	**Battery recharge**
F3 1 A Self-resetting	**Positive terminal Terminal Board M5 and M6 INPUTS**
F4 1 A Self-resetting	**Positive terminal Terminal Board BUS1** **Positive terminal Terminal Board BUS3** **Positive terminal Terminal Board PC/STAMP.**
F5 1 A Self-resetting	**Positive terminal Terminal Board BUS2**
F6 1 A Self-resetting	**Connector EXP1**
F7 1 A Self-resetting	**Positive terminal Terminal Board M8** **Positive terminal Terminal Board CN4 (outputs open collector)**

In the case of faulty fuse or excess voltage in battery charge, and if enabled, the control panel memorises a code to identify the fault according to the table below:

SERVICE EVENT	MEMORISED EVENT MESSAGE
F1 Fuse failure	**Power line failure**
F2 Fuse failure	**Battery failure**
F3 Fuse failure	**Power failure 16**
F4 Fuse failure	**Power failure 08**
F5 Fuse failure	**Power failure 04**
F6 Fuse failure	**Power failure 02**
Battery recharge malfunction (volt. > 15V)	**Power failure 32**

N.B.: in the case of various malfunctions the control panel memorises the sum of malfunction codes as a numerical code (for example if fuse F3 and fuse F6 fail the control panel: POWER FAILURE 18). The Fuse F7 failure is not signalled.

Signalling status of battery level

The AF998EXP control panel systematically checks the status of the battery, executing a DYNAMIC TEST at regular intervals of time defined by the BATTERY AUTOTEST INTERVAL (see paragraph SPECIAL FUNCTIONS). In the case of positive battery autotest no memorisation will be carried out, while in the case of malfunction programmed activations for BATTERY FAILURE in AUXILIARY FUNCTIONS, will be considered.

Signalling power line failure

The Control panel systematically checks the status of the MAINS VOLTAGE 230 Vac checking that it is not absent for a time exceeding the tone set in the parameter DELAY ALARM DUE TO ABSENCE OF MAINS (see SPECIAL FUNCTIONS). Once this time of absence of voltage from the mains is exceeded the condition of malfunction is memorised keeping in consideration the activations programmed for POWER LINE FAILURE in AUXILIARY FUNCTIONS.

The resetting of mains voltage will be memorised according to the programmed activations.

Signalling status of WATCH-DOG

The circuit supervisor, called Watch-Dog, which the control panel has available, can reset the microprocessor following problems due to radio, electromagnetic, etc interference.

The intervention of this device is memorised in the events memory, according to programmed activations.

Autotest

The AF998EXP control panel executes a complete test of some vital functions at regular intervals called AUTOTEST INTERVALS (see SPECIAL FUNCTIONS).

Should the AUTOTEST be positive, no memorisation will be executed, while in the case of malfunction the activations programmed will be considered.

Special function

The following parameters define some important operative modes for the control panel:

PARAMETER	SET VALUES	PRE-SET VALUE	DESCRIPTION
Self test range	0....255 hours	0 hours	The hourly interval is established when the control panel automatically carries out a functional AUTOTEST. This period is also the time that passes from the start up of the control panel and the first autotest. **If the set value is 000 the autotest is not executed**
Battery test range	0…255 minutes	10 minutes	Establishes after how many minutes the control panel automatically carries out a DYNAMIC TEST OF THE BATTERY.
Power failure delay	0....255 minutes	30 minutes	Establishes after how much time after the ABSENCE of MAINS voltage the control panel will consider this event a malfunction and, if programmed, inserts it in events memory (see paragraph on SECONDARY FUNCTIONS).
Radio supervision range	0....255 minutes	0 minutes	Establishes after how much time the control panel checks the status of the radio devices installed. The supervision alarm activates the Technical Alarm output.
Failure output	0..32	0	It is possible to establish which open collector type output (1..32) is activated in case of fault. **Programming 0 no output is activated.**
Control panel status at power ON	ON, OFF, PREVIOUS	PREVIOUS	If it is necessary, at the time of the total feed (battery and mains) for the system to be completely inserted, then select ON. Selecting OFF, once both the feeds are reset, battery and mains, the system will be completely disconnected, while if choosing PREVIOUS the system will maintain the condition as it was prior to the absence of mains.
Key operation	On/off, partial ON	Partial ON	If this function is set as Partial ON, the AF342 decoder board allows the partial insert of the first three areas. Otherwise it inserts and disconnects areas 1,2,3 in block.
TC output with control panel OFF	Negative Positive	Negative	Establishes if, with control panel OFF, the TC output is negative or positive.

PARAMETER	SET VALUES	PRE-SET VALUE	DESCRIPTION
Printer output	TC output, PC/Printer output	TC output	If the telephone dialler is connected to the PC/STAMP connector, the serial printer can be connected to the TC output. In this case this function must be set as TC output. In order to know how to connect the printer to the TC output please call the AVE Service department, they will give you instructions.
Printer output ON/OFF	On/off	Off	If this function is set as ON, the messages relating to the activity of the control panel a**re directed in real time** on the PC/PRINT connector, used for the local connection with the P.C. Connecting the cable AFPC01 to the connector PC/PRINT, and to this a **printer with serial interface RS232 (1200 baud, 8 bit, No Parity, 1 bit of Stop)** it is possible to obtain an in line print of the activity of the central station. Instead of a printer it is possible to connect a P.C. which has an active terminal programme such as, for example, Windows HyperTerminal. **Warning: activating the printer output the operational characteristics of the keyboards will be considerably slower.**
Programming code	Preceded by priority 8 code, Direct with control panel off	Preceded by priority 8 code	Establishes if to enter programming it is necessary to precede the technical code by a priority 8 code, or not.
Area Times	Bound areas, separate	Separate	If this function is set as Separate in the TIMES menu it will be possible to define the times for each individual area. Otherwise the times of all the areas are bound to area 1.
Temporarily excluded input restoration	Manual, Automatic	Automatic	If this function is set as Automatic, excluding an input it is reinserted at the next insertion of the system. Otherwise it will be necessary to reinsert it manually, this means a decrease in the safety of the system.
Alarm area output	Area alarm output, Area alarm output + general alarm	Area alarm output	Establishes if in case of alarm is activated only the area alarm output only, or the area alarm output and the general alarm output
Decoder leds **AF45343-AF441043-AF442043**	Status associated areas, Status of system	Status associated areas	If this function is set as Status- Associated Areas, the 3 leds of the AF45343 decoder the status of the first 3 areas associated with the decoder. Otherwise they view the general state of the system (green led INSERTED, yellow led MALFUNCTION, red led ALARM)
Keyboard message	Digit code, On/Off	Digit code	This function allows choosing the message that appears on the keyboard display.

EVENTS MEMORY

The AF998EXP control panel memorizes in an appropriate non volatile memory up to 100 events linked to the activity of the system; specifically the following are recorded:

- User codes and special codes that are digited or introduced through the use of the electronic key
- Intruder and tamper alarms;
- activation / disactivation of the system;
- malfunctions of the system.

When the events memory is complete the oldest event is lost leaving space for the recording of a new event.

It is possible to read the information recorded in the EVENTS MEMORY of the keyboards display scrolling backwards, starting from the most recent (event N. 001) to the oldest event (event N. 100) without altering the contents.

N.B.: it is necessary to register the exact date and time in order to allow events to be registered correctly (see relative paragraph). The regulation of date and time can be done only through the keyboard.

The information viewed when unloading the events memory are:

1. **progressive number** (chronologically inverse, event N. 001 is the most recent) ;
2. **description of the event**;
3. **date and time** when the event was registered;
4. **comment** (optional, not for all events).

Example : alarm input 11, garage :	
EVENT N. 001	progressive number;
ALARM INPUT 11	description of the event;
10:15 10/01/95	date and time of registration;
GARAGE	comment.

N.B.: the Events Memory can be viewed and printed without limits.

Viewing last events

In the case of signals of alarm or malfunction, it is possible to see the relative events immediately on the LCD display operating as follows:

1. enter a valid code with priority 2 or greater;
2. then press key " C " on the keyboard;
3. the display will begin to show the events (only description and any comment);
4. to end press "***#".***

Viewing all the events

It is possible to scroll down on the LCD display and view all the events memory of the control panel, proceed as follows:

1. digit a priority 8 code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by the C and D keys the **EVENTS** menu and confirm by the key *;
3. the wording **EVENT 01** appears on the display showing it can view the most recent event;
4. press " * " to confirm, the automatic viewing of information relating to the selected event will begin (description, date and time, any comment) this takes a few seconds to allow easy reading;
5. use keys " C " and " D " to pass to other events and the key " * " to view contents;
6. to exit press "***#"*** a number of times until the message "ENTER CODE" appears on the display***.***

Print events

It is possible to pass the information relating to the events to the printer output. The automatic printing of the contents of the archive of normal events in inverse chronological order is achieved by connecting the cable AFPC01 to the PC/PRINT connector, and this to a printer with serial interface RS232, able to print at least 1200 characters per second, and configured with the following protocol:

1200 baud, 8 bit, No Parity, 1 bit Stop

Alternatively it is possible to connect the cable AFPC01 to the PC/STAMP connector the control panel and to this the serial port RS 232 of a personal computer on which a terminal programme is allowed to function, such as Windows' HyperTerminal, for example.

N.B.: The print events function always start from the most recent and can be interrupted at any time with the key #.

Remote reading of the event memory

Using a personal computer and software AF998SW it is possible to obtain the remote reception of the contents of the events memory from the control panel.
For this operation proceed as follows:

1. The programme AF998SW must be started from the personal computer;
2. in the programme select the window **RECEIVER**;
3. the wording **RECEPTION** appears and indicates that the automatic response is available for remote calls from the control panel;
4. with the AF983 keyboard, totally disconnect the system;
5. use the keyboard to enter a USER CODE with priority level 8;
6. use the keyboard to enter the TELEPHONE CALL CODE (default 444444): the LCD keyboard will show the wording **REMOTE CONNECT**;
7. the control panel starts the telephone call to telephone number 9 (technical telephone number that should have been previously programmed locally through the personal computer). Once the number has been dialled the control panel remains in the synchronisation situation described in point 4) for a few seconds waiting to start communicating with the computer;
8. when the telephone call arrives, the programme AF998SW receives and views the data from the control panel concerning the contents of the events memory and, if previously programmed to do so, will save them in an archive file that can be viewed and printed thereafter;
9. the correct outcome for the procedure unloading the events memory is shown in the wording **TERMINATED SUCCESSFULLY** while if the procedure has not been completed correctly the wording will be **UNLOAD NOT COMPLETED**; in this case repeat the procedures stated above.

N.B.: It is possible to interrupt the RECEPTION procedure at any time using the key ESC on the computer keyboard and this event will be confirmed with the wording "TERMINATED BY THE OPERATOR".

TEST FUNCTION

Input tests

The AF998EXP control panel allows carrying out input tests without this causing alarm signals and viewing inputs in alarm on the display and the keyboard buzzer being activated.

To enter input test proceed as follows:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by the C and D keys the **IMPUT TESTS** menu and confirm by the key *;
3. the control panel will view the analog reading of the feed, fuses, and inputs;
4. press "#" to view **INPUT TESTS**;
5. at this point act on the input, the relative status will be viewed on the keyboard display;
6. to exit press "#" for a few seconds.

N.B.: during the INPUT TESTS function the events memory memorises the activities of the inputs. Consulting the contents of the events memory (see paragraph EVENTS) it is possible to see the sequence of activations memorised during the input tests.

Should a personal computer be locally connected to the relative serial output (identified on the control panel station with the wording COMPUTER) and it is set in TERMINAL / COMPUTER mode, it will receive and view the information relating to the inputs in alarm in the sequence in which they have been activated, giving the installer a very useful pathway to check the operation of the inputs.

Sirens test (alarm outputs)

The AF998EXP control panel allows executing the test of all the alarm outputs found on the card by activating them individually for a time of approx. 4 seconds, at the end of which the alarm output returns to a state of deactivation.

Therefore the status of the following alarm outputs can be checked:

- **GENERAL ALARM OUTPUT AND SELF-POWERED SIREN**
- **ON/OFF OUTPUT**

N.B.: For the entire time when the alarm output is active, the display will show, next to the description of the selected alarm, the wording >> * <<;

Tamper test

The AF998EXP control panel allows executing the control panel tamper input test, found on the terminal board M7, without alarming the control panel and therefore without setting on the installed sirens.

To carry out the control panel tamper test:

1) Place jumper JP1 in position A (open)
2) Press the button " * " to activate the CONTROL PANEL TAMPER TEST function

At this point the LCD keyboard display will view the wording:

- **CONTROL PANEL TAMPER CLOSED:** if the contact connected to the terminal M7 is closed
- **CONTROL PANEL TAMPER OPEN:** if the contact connected to the terminal M7 is open (in this case the buzzer is also activated).

N.B.: the JP1 JUMPER in position C (closed) short circuits the control panel tamper input and consequently makes it inactive, while in position A (open) it makes it active.

Battery test

The AF998EXP control panel allows executing a dynamic test of the battery; this consists in reducing the voltage issued by the DC power supply of the control panel for a time of approximately 1 second in order to allow the buffer battery to come into operation and then check the charge status (see paragraph on SPECIAL FUNCTIONS).

At the end of the test the keyboard display shows one of the following wordings:

- **BATTERY OK** **if the test results are positive**
- **BATTERY FAILURE** **if the test results are negative**

N.B.: the battery test does not influence the normal operation of the control panel.

Remote output tests

The control panel allows carrying out the test of the remote outputs activating them individually for a time of approximately 4 seconds at the end of which the alarm output returns to a state of deactivation.

After having selected the desired output XX, press the confirm key found near the wording " OUTPUT XX TEST? " on the keyboard display the activation test for the selected output will begin.

The activated output condition is determined by the appearance of the wording " OUTPUT XX ON " on the keyboard display.

Communication on the telephone line test

If the mode COMMUNICATIONS TEST is selected even without being enabled from the keyboard, the following operations can be undertaken:

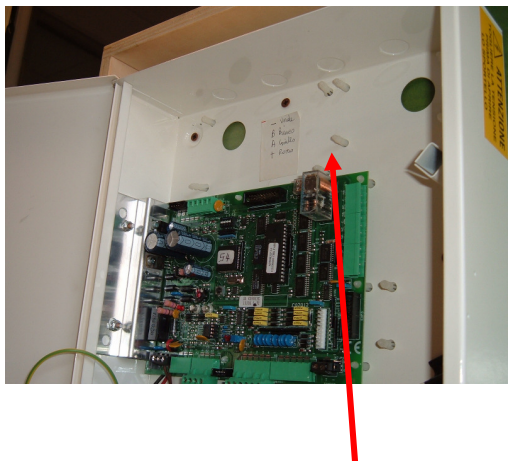
- REMOTE PROGRAMMING OF FUNCTIONAL PARAMETERS FROM THE CONTROL PANEL;
- RECEPTION OF THE CONTENT OF THE EVENTS MEMORY OF THE CONTROL PANEL;
- RECEPTION OF PROGRAMMING FROM THE CONTROL PANEL.

N.B.: This operation significantly decreases the safety of the system and therefore it must be used only to check functions and not as an operating mode.

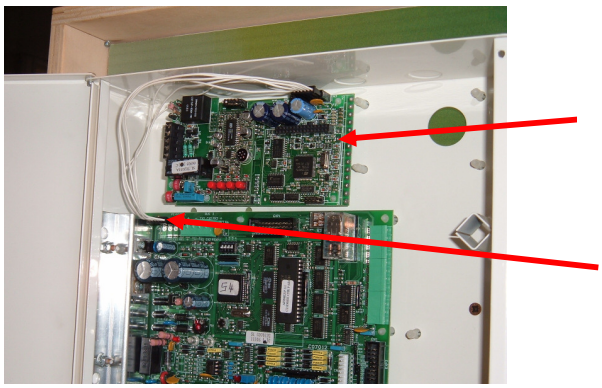
To receive instructions regarding the tele management from remote PC, contact the AVE telephone service centre using the toll-free number.

INSTALLING AND PROGRAMMING THE TELEPHONE DIALLER AF899B

Installation



To install the telephone dialler AF899B it is important to completely remove voltage to the control panel (remove mains voltage and the back up battery).
Insert 4 plastic pins into the appropriate holes found above the control panel board (see figure here on the side) and hook the telephone dialler board.
Having obtained the result shown in the figure below, proceed by connecting the white cable to the PC/STAMP connector ircuit closing switch located on the upper left hand in the control panel board.



Connection to the telephone line must be done as follows:

- Connect the telephone line to terminals L L
- Connect any telephone apparatus to the terminals T T
- Connect GND by using the appropriate terminal

Programming telephone numbers

To programme telephone numbers using the keyboard proceed as follows:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by the C and D keys the **TELE. NUMBERS** menu and confirm by the key *;

N.B.: The control panel allows programming 9 telephone numbers. Numbers 1 to 8 are used to send alarm situations, while telephone number 9 is used for remote programming via PC.

3. With keys **C** and **D** it is possible to scroll through the 9 numbers and choose the one to be set confirming it with *
4. enter the numbers that make up the telephone number and then confirm with *; over and above the numbers there are also the characters C, P, that are used for the following functions:

C = in the case of a PABX switchboard

P = to insert a pause during composition

N.B.: the characters C and P are selected respectively using the keys C (switchboard) and A (pause during composition).

5. At this point follow the instructions that appear on the keyboard display using the following table:

OPTION	MEANING
Code	Identifying number of the system used when transmitting alarms in digital protocol to security companies
N.° Communication attempts	Sets the number of attempts which the control panel will carry out for each of the 8 programmed telephone numbers, if the “end call” sign is not received (see note 1)
Communication Protocol	It is possible to choose: • Digital Protocol Contact ID” (see note 2) • Voice Synthesis (one of 4 messages run by the AF899SV4 board) • PC for remote programming with AF998SW • SMS (see note 3)

Note 1: the “end call” signal is obtained by pressing **5** on the telephone of the user called, in the case of transmission with voice message. In case of transmission with digital protocol, when it receives the alarm the security company automatically generates this signal.

Note 2: The device permits the transmission of alarms in “Contact ID” protocol towards security companies. (from ver. EPROM 3.4). For all the details relating to this application request the relative documentation from the AVE S.p.A. technical services office

Note 3: the selected telephone number will receive an SMS with the description of the event that has taken place, together with the time and date (from ver. EPROM 4.4). Option available only with module GSM AFGSM02 installed. Example:

GEN. ALARM
14.00 05/03/08

Telephone Options

Option	Meaning
Sequence called	Set if, in the case of communication NOT successful (and if the telephone number called is busy, for example), the same telephone number will be attempted immediately or if the communicator must proceed with the selection of other telephone numbers.
End call cycles	Set if the first call that receives the signal “ end call” (see note 1) must determine the block of all subsequent calls, even of other telephone numbers.
Stop switch off	Set if the cycle of telephone calls can be interrupted by centering a valid level 5 or greater priority code.
Free line Tone	Determines whether, before starting the cycle of calls the sequence switch must check if the line tone is present or absent
PSTN/GSM Priority	If module AFGSM02 is installed and the PSTN line has been connected, it determines which of the two lines has priority over the other.
Duration of pause between two calls	Allows selecting the time interval between two consecutive calls to the same telephone number (0 - 60 seconds).
Digital format	Sets the type of digital format. Setting is supplied by the security company.

Note 1: the “end call” signal is obtained by pressing key **5** of the telephone of the called user, in the case of transmission with voice message. In the case of transmission with digital protocol, when it receives the alarm the security company automatically generates this signal.

Note 2: in the case of reception of an alarm call, press the key **0** to enter DTMF control mode. The control panel will emit a long tone, it waits for a valid code to be entered and then allows the use of remote controls described in the paragraph below “Use of the telephone dialler in bidirectional mode” (function available from rel. EPROM 4.4).

Alarm events

The events that start the call to the telephone numbers are:

EVENT	PROGRAMMING
• Central station disconnected • Central station inserted • Reset alarm • General Alarm • Central station partially inserted	Association of telephone numbers through programming menu “**RAP. CODES**”
• Battery malfunction • Mains malfunction • Watch dog (System Error) • Autotest	Association of telephone numbers through programming menu **“SECONDARY FUNCTIONS”**
• Single input Alarm	Association of telephone numbers through programming menu **“INPUTS”**
• Entering a code	Association of telephone numbers through programming menu **“CODES”**

N.B.: If, when programming the options, a telephone number has been associated with the ID contact digital protocol, in alarm events it is not possible to associate the transmission to a voice message.

Use of the telephone dialler in bidirectional mode

AF899B can also be called from a remote telephone to carry out activations. In this situation it is necessary to undertake the following operations:

1. digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by the C and D keys the **COMUNICATION TEST** menu and confirm by the key *;
3. Set the LINE parameter as desired, remembering that operation is as follows:
   - PSTN Line→ the central station responds on PSTN line;
   - GSM Line→ the central station responds on GSM line (if the module AFGSM02 is installed);
   - AUTO Linea→ the central station responds on GSM line in remote controls management mode and on PSTN line to carry out the remote tele management from PC.
4. Press “ # “ to exit.

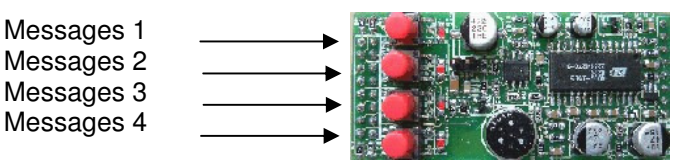
In bidirectional operation, should the Control panel respond with the GSM mode, the caller number must be entered in the first 4 positions of the phone book memorised in the control panel.
To run the telephone dialler by remote, one in line with the it, it is necessary to enter an authorisation code level 5 or greater. If the code is correct the sequence switch will emit 3 beeps in confirmation.
The controls for management by remote are the following:
.

KEYS	FUNCTION	ACOUSTIC SIGNAL
9000	Interrogate control panel status	3 beeps = ON, 1 long beep = OFF, 20 short beeps = ALARM
9001	Interrogate status area 1	
9002	Interrogate status area 2	
9003	Interrogate status area 3	
9004	Interrogate status area 4	
9005	Interrogate status area 5	
9006	Interrogate status area 6	
9007	Interrogate status area 7	
9008	Interrogate status area 8	
0000	Disconnection control panel	3 beeps = OK, 1 long beep = FAIL
0001	Disconnection area 1	
...	.....	
0008	Disconnection area 8	
1000	Insert control panel	3 beeps = OK, 1 long beep = FAIL
1001	Insert area 1	
....	.....	
1008	Insert area 8	
2001	Interrogate status input 001	3 beeps = NO ALARM, 1 long beep = ALARM
...	.....	
2032	Interrogate status input 032	
4001	Interrogate status output 001	3 beeps = ON, 1 long beep = OFF
...	.....	
4032	Interrogate status output 032	
5001	Disconnect output 001	3 beeps = OK, 1 long beep = FAIL
...	.....	
5032	Disconnect output 032	
6001	Activate output 001	3 beeps = OK, 1 long beep = FAIL
...	.....	
6032	Activate output 032	
7000	Interrogate status battery	3 beeps = OK, 1 long beep = FAIL
7001	Interrogate status fuses	3 beeps = OK, 1 long beep = FAIL
7002	Interrogate status mains	3 beeps = OK, 1 long beep = FAIL

N.B.: For correct operation it is necessary to enter YES in the COMMUNICATIONS TEST → REMOTE PROG.menu, if not it is possible only to insert the control panel but not to disconnect it.

Voice synthesis board AF899SV4 and voice messages

The voice synthesis board AF899SV4 allows the transmission of 4 voice messages. It has a button and a Led for each of the 4 messages.



To register the messages proceed as follows:

1. Press for more than 2 s the button of the message to be recorded, until the corresponding Led lights up, keep the button pressed for the whole duration of the recording. (max. time 10s)

2. Should you wish to interrupt the recording before 10s are up release the button of the relative message.

To hear the message proceed as follows:

1. Connect a 8 ohm/0,25W loudspeaker to the appropriate connector on the board.

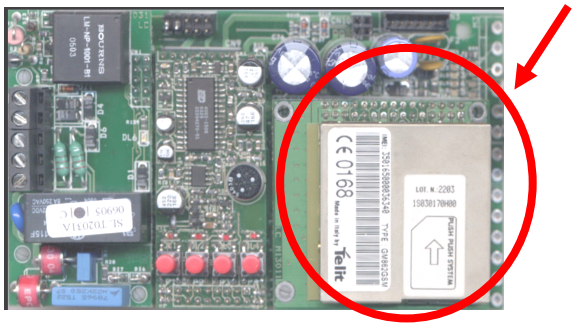
2. Press for more than 2 s the button of the message to be heard. The voice message will be reproduced automatically.

N.B.: at the end of the recording the message will be reproduced for relative checks.

Installation and use of the module AFGSM02 (functioning with rel. EPROM 3.4)

To install the module AFGSM02 it is necessary to follow the operations below in order:

- Remove voltage to the control panel (remove mains voltage and the battery);
- Fix the electronic card in its housing (CN1 connector) and assemble the aerial outside the control panel (see figure);
- Insert SIM card;
- Supply the control panel.



When voltage is returned the first 4 leds on the card AF899B light up in sequence, indicating that the check phase of the new module is inserted by the sequence switch. At the end of the procedure the leds take on the following meaning:

LED	COLOUR	TYPE OF FLASHING	MEANING
1	Green	NOT USED	
2	Red	On fixed	The control panel is connected with the Hayes telemanagement module
3	Green	With module GSM installed it views in impulses the level of the GSM signal picked up, from 0 to 4.	
4	Yellow	On fixed	The control panel is communicating with the GSM module
5	Green	Slow (time led on = time led off) 0.5 ON – 0.5 OFF	GSM network signal low or no network. Attempt to reconnect underway. (if persists check the correct insertion of the SIM, switch the control panel off and on)
		Fast (time led on less than time led off) 0.3 ON – 2.7 OFF	CORRECT functioning, cover present.
		Off	GSM module not present
		On fixed	Call underway (signals only incoming calls)

Note 1: There is no particular function to carry out the telephone dialler test, just open an input associated to a number and check the execution of the call.

Note 2: All the SIM insert/disconnect operations must be carried out with the control panel disconnected.

CALENDAR

The AF998EXP control panel, has an internal clock/calendar that can manage a WEEKLY SCHEDULER with which to automatically execute some operations. The CALENDAR function allows each day of the week (Monday...Sunday) and 32 programmable holidays to be associated to one of the eight programmes available :

A, B, C, D, E, F, G, H

Selecting "-" with the programme associated to a day of the week or a holiday, for that day none of the eight programmes will be executed.

Each programme will contain the information concerning hours and types of operations that will be executed and which are described below.

Setting the weekly scheduler

Programming the weekly scheduler is done by selecting the day and choosing one of the programmes from among the possible types available: A,B,C,D,E,F,G,H, or "-" ("-" = no programme selected).

Setting holidays

The 32 holidays are special days, freely programmable by month and day. At the expiry of each day programmed as a holiday, the programme A,B,C,D,E,F,G,H, or "-" will not be executed in the way it is programmed for the corresponding day of the week (Monday .. Sunday), but the programme entered for that specific day will be executed.

TIME SCHEDULER

This function allows setting the operations of the WEEKLY SCHEDULER establishing the 8 programmes A,B,C,D,E,F,G,H that could be assigned to the days of the week and to 32 holidays. Each **PROGRAMME** contains **20 STEPS**, each is assigned the **TIME and ACTION** that the control panel AF998EXP undertakes automatically.

The same ACTION can be repeated more times as long as this is at different times, within the same programme. As there are 8 programmes available there is a high flexibility in controlling the automated functions.

The programmed action is carried out automatically by the control panel ONLY AT THE EXACT TIME SET (HOUR AND MINUTES). If an action programmed at a certain time is not executed for any reason and the control panel clock has passed this time, **this action will not be executed within the same day**. It is not necessary to follow an increasing time sequence when setting the action within the programmes.

N.B.: it is important to be very careful in the choice of actions executed automatically by the control panel as, if these are not programmed correctly they can lead to undesirable operations.

Setting the programmes

For each of the 20 programme steps it is necessary to select the following parameters:

HOURS (possible values 00..23) hour in which the programmed action will occur

MINUTES (possible values 00..59) minutes in which the programmed action will occur

ACTION	POSSIBLE OPTIONS
0	No action
1	Complete insertion / disconnection of the control panel
2	activation / disconnection of an output
3	insertion / disconnection of an area
4	block / unblock codes.

NUMBERS	POSSIBLE OPTIONS	
Action = 1 :	NUMBER	no effect on the action
Action = 2 :	NUMBER 0..32	identifies the address of the output to be activated/deactivated;
action = 3 :	NUMBER 1..8	identifies the area to be inserted/disconnected;
action = 4 :	NUMBER 1..8	identifies the priority of codes on which to execute the block.

STATUS	POSSIBLE OPTIONS
Action = 1	Status 0 = complete disconnection of the control panel;
	Status 1 = complete insertion of the control panel;
Action = 2	status 0 = disconnect the output;
	Status 1 = activate the output;
Action = 3	status 0 = disconnect the area;
	Status 1 = insert the area;
Action = 4	status 0 = block codes;
	Status 1 = unblock codes;

Extension

The time programmer automatically executes the programmed actions in the times set. If you wish to intervene in the programmed action suspending it for a limited amount of time (for example delaying the automatic insertion of the control panel by one hour to allow an extraordinary action) it is necessary to programme the submission of the said action, in the relative programme step, to the extension.

EXTENSION YES = the action has been subjected to extension
EXTENSION NO = the action has not been subjected to extension

The two parameters that determine the operational function of the extension are:

- **EXTENSION TIME** stated in minutes (from 30 to 60 minutes);
- **NUMBER OF other REQUESTS** for extension (from 0 to 4).

The request to activate the extension comes about by entering the special code 38 (default 666666).
This operation starts the extension time **during which ALL** the automatic actions controlled by the time programmer, **and subjected to extension**, are suspended. At the end of the extension time the suspended actions will be executed.

Before the extension time expires another request can be executed, by entering the special code 38 (default 666666), for the number of times compatible with what was programmed. On the other hand if the **extension** must be interrupted digit the special code 39 (default 777777) that will launch a residual period of about 10 minutes after which the suspended actions will be executed.
When an extension period has ended (in terms of time or interruption by special code 39), the number of requests will return to zero and the control panel gets ready o accept a new extension cycle.

N.B.: when requesting a further extension before the previous period has ended, **any residual time not yet expired is NOT summed to a new extension interval but is lost** therefore only one entire extension period can be used for any further request. It is therefore advisable to renew the extension request close to the expiry of the previous time in order to make full use of this function.

Daylight saving time

With this function it is possible to set the dates of the coming into effect of DAYLIGHT SAVING TIME/SUN TIME in order to allow the automatic setting of the time by the ANNUAL TIME SCHEDULER. Select the date and time on which the time will automatically move forward one hour (passage from sun time to daylight saving time) and the date and time on which the time will automatically move back one hour (passage from daylight saving time to sun time).

Specifically the following parameters must be programmed :

CHANGE FROM SUN TIME TO DAYLIGHT SAVING TIME	
Forward month	Month in which the automatic change takes place
Forward day	Day of the month in which the automatic change takes place
Forward time	Time when the automatic change takes place

CHANGE FROM DAYLIGHT SAVING TO TIME SUN TIME	
Back month	Month in which the automatic change takes place
Back day	Day of the month in which the automatic change takes place
Back time	Time when the automatic change takes place

Setting the automatic time change must be done for all the parameters and with great care as an incorrect selection of even only one parameter can cause the time programmer to function incorrectly.

For the correct operation of the automatic time change:
THE FORWARD MONTH MUST BE DIFFERENT AND BEFORE THE BACK MONTH;
DO NOT select months, days and times that are NON EXISTENT (eg. 31 April) ;
DO NOT select times outside the interval 03...06 .

If the automatic time adaptation is NOT used it will be necessary to select :
FORWARD MONTH 00 , BACK MONTH 00

Blocking the time scheduler function

Opening an programmed input of the BLOCK PROGRAMMER (Block scheduler) type, it is possible to stop the actions of the time scheduler until the control input is not reset. All the actions that have not been executed during the block will NOT be executed when the regular function of the time scheduler is resumed.

PROGRAMMING THE CONTROL PANEL USING THE P.C.

In the AF998EXP control panel **it is possible to programme all the functional parameters** seen previously using both the LCD keyboard AF983 or using a personal computer; in the latter case all the operations are assisted by a practical ON LINE HELP from the programme AF998SW, activated by simply pressing the Help key?. As an example some programme screens are shown in the paragraph “Programming default parameters”.

IMPORTANT : 5 homogenous groups of parameters can be selected through the personal computer that will be updated in the control panel during programming. The parameter groups NOT selected will NOT be updated in the control panel while the GROUPS OF SELECTED PARAMETERS WILL BE UPDATED IN BLOCK cancelling any modifications executed by the keyboard and not updated in the CLIENT FILE in the personal computer. Be very careful to keep the CLIENT FILE updated in the personal computer when functional parameters are modified with the LCD keyboard.

How to enable the control panel programming procedure through the personal computer, will be explained below, while for the description of the meaning of the parameters please see the ON LINE MANUAL in the programme AF998SW.

N.B.: in order for the control panel and the personal computer to be able to communicate, the CONTROL PANEL PROGRAMMING CODE (Special Code 37, default 555555) set in the Control panel MUST COINCIDE WITH THE CONTROL PANEL PASSWORD set on the menu relating to the OPTIONS of the programme AF998SW.

Programming the control panel through the personal computer can come about in two ways:

1. local connection using the control panel output PC/PRINT., connected to the personal computer serial communication port RS232 through a special serial cable AFPC01;

2. remote connection through AF899B telephone dialler/modem installed in the control panel, and the MODEM connected to the serial communications port RS 232 of the personal computer.

Setting the connection modes and parameters

To set the correct connection parameters with the central station, select the window **Options** on the personal computer. It is possible to set the following parameters :

1. P.C. communications port to which to connect the cable AFPC01 for local connection, or the modem for remote connection;
2. Type of connection LOCAL or REMOTE;
3. The CONTROL PANEL PASSWORD (default 555555) must coincide with the PC PROGRAMMING CODE programmed in the control panel *(special code 37 default 555555);*
4. Select if you wish to operate locally or remotely.

Local connection

To have a direct connection between the control panel and the personal computer, it is necessary to have a connection cable (art. AFPC01) inserted in the COMPUTER output at the control panel side , and into the serial port RS 232 at the personal computer side into which the programme AF998SW has been installed.

Three functions are possible with the local connection:

1. updating the functional parameters of the control panel (It programmes the control panel);
2. reading the configuration of the control panel (Reading the control panel);
3. reading the contents of the control panel events memory (Read Events Memory);.

The correct local programming procedure of the control panel requires the following operations :

1. start the programme AF998SW on the personal computer
2. once the CLIENT FILE has been loaded, relating to the control panel programming, select the window PROGRAMME THE CONTROL PANEL;
3. select the parameter groups that must be updated;
4. select EXECUTE TRANSMISSION;
5. the leds positioned on the right of the window light up indicating the progression of the programming and any errors picked up;
6. programming requires a few minutes to be completely executed;
7. to prepare the central station to communicate with the LCD keyboard AF983 completely disconnect the system;
8. use the LCD keyboard AF983 to enter a USER CODE with priority level 8;
9. use the LCD keyboard AF983 to enter the PC PROGRAMMING CODE (Special Code 37 default 555555) that must coincide with the CONTROL PANEL PASSWORD;
10. At this point the LCD keyboard display will show the wording " LOCAL CONNECT.".

N.B.: it is possible to interrupt the control panel programming procedure at any moment using the key ESC on the computer keyboard, having done that, only part of the parameters will be updated.

Both the programme AF998SW and the control panel remain in the in a synchronisation phase for a few seconds exiting automatically from the respective procedures unless communication begins. It is advisable to comfortably set the programme AF998SW until the selection of the last of the 5 groups of parameters, and set the control panel in the condition of system disconnected. Then, from the LCD keyboard enter a USER CODE with priority level 8 followed by the PC PROGRAMMING CODE (special code 37 default 555555) and confirm the start of transmission from the personal computer keyboard.

The correct local reading procedure of the control panel configuration requires the following operations:

1. start the programme AF998SW on the personal computer
2. once the CLIENT FILE relative to programming the control panel has loaded, or a new client file that must be updated with control panel configuration data, select the window READ THE CONTROL PANEL;
3. select the parameter groups to be updated;
4. select EXECUTE RECEPTION;
5. the leds positioned on the right of the window will light up showing the progression of the reading and any errors;
6. the reading takes a few minutes to be fully executed;
7. to prepare the central station for communicating with the LCD keyboard AF983 totally disconnect the system;
8. use the LCD keyboard AF983 to enter a USER CODE with priority level 8;
9. use the LCD keyboard AF983 to digit the PC PROGRAMMING CODE (Special Code 37 default 555555) that must coincide with the CONTROL PANEL PASSWORD;
10. At this point the LCD keyboard display will show the wording " LOCAL CONNECT.".

The same note seen when programming the control panel, applies.

N.B.: once the reading operations have ended, the PC will have on the video the existing configuration of the control panel; save it in the hard disk under a suitable name.

The correct procedure for the local reading of the contents of the central station events memory requires the following operations :

1. start the programme AF998SW on the personal computer
2. once the CLIENT FILE relative to programming the control panel has loaded, or a new client file that must be updated with control panel configuration data, select the window READ THE EVENTS MEMORY;
3. select EXECUTE RECEPTION;
4. the leds positioned on the right of the window will light up showing the progression of the reading and any errors;
5. the reading takes a few minutes to be fully executed;
6. to prepare the control panel for communicating with the LCD keyboard AF983 totally disconnect the system;
7. use the LCD keyboard AF983 to enter a USER CODE with priority level 8;

8. use the LCD keyboard AF983 to digit the PC PROGRAMMING CODE (Special Code 37 default 555555) that must coincide with the CONTROL PANEL PASSWORD;
9. at this point the LCD keyboard display will show the wording " LOCAL CONNECT".

The same note seen when programming the central station, applies.

N.B.: once the reading operations have ended, the PC will have on the video the existing configuration of the control panel; save it in the hard disk under a suitable name.

Remote connection using telephone modem

To have instructions concerning the telemanagement from a remote PC, contact AVE technical services department using the toll-free number.

DEFAULT (FACTORY SET) PROGRAM AND CONTROL PANEL RESET

The control panel is supplied with a standard default programme designed to fit in, without any particular modification, to the majority of systems. After having modified these values, should it be necessary, it is possible, using the appropriate procedure, to reset the control panel and return to the factory settings. The default programme is divided into two parts:

- Programming the default codes
- Programming the default parameters

Programming the default codes is stated in the appropriate paragraph, to reset the default conditions following any modifications, follow the procedure stated below.

Resetting the default code values

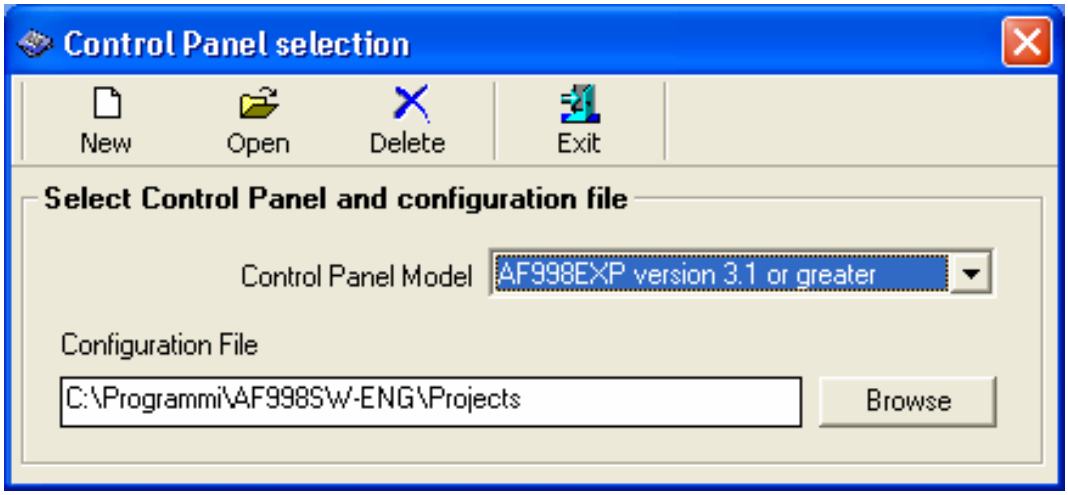
1. Move dipswitch n.4 on the central station card to ON;
2. for a few moments press the reset button **P1** found on the motherboard on the upper left;
3. the wording "INITIALISATION" appears on the LCD display;
4. within about 5 seconds return dipswitch n.4 to OFF. This operation must occur within the first 5 seconds, when the wording " INITIALISATION " is still present;
5. the LCD display shows the wording " IN EXECUTION ", that remains for about 20 seconds;
6. at the end of the initialisation the user codes and special codes will have taken on the values stated in the table of the previous paragraph and the control panel will be in the service conditions established by the programming.

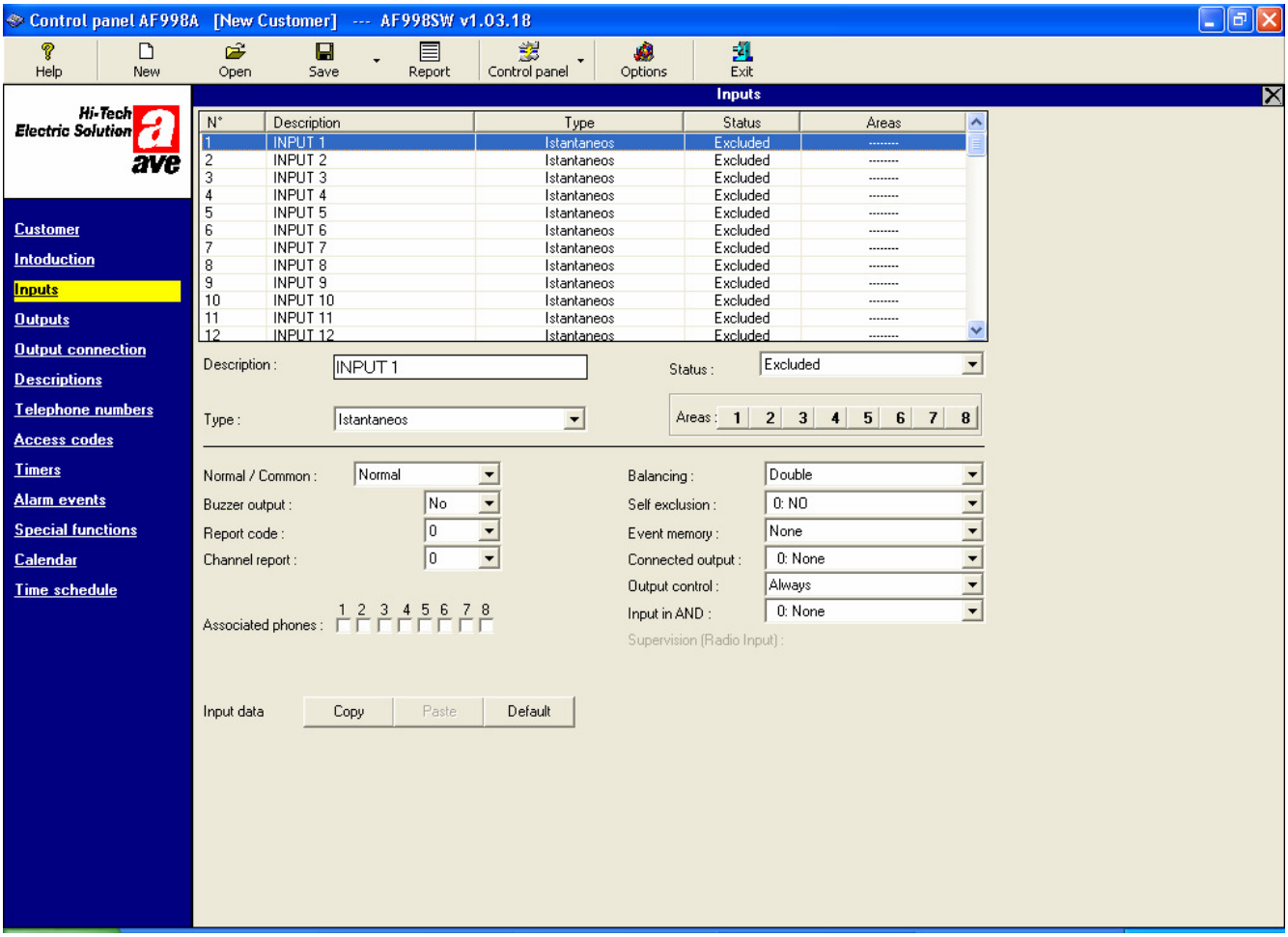
N.B.: if, in point 4 the dipswitch remains ON, or it is returned to OFF after the wording "INITIALISATION" has disappeared, the codes are NOT modified and therefore the default values are not set. In this case all the steps starting from point 1 must be repeated.

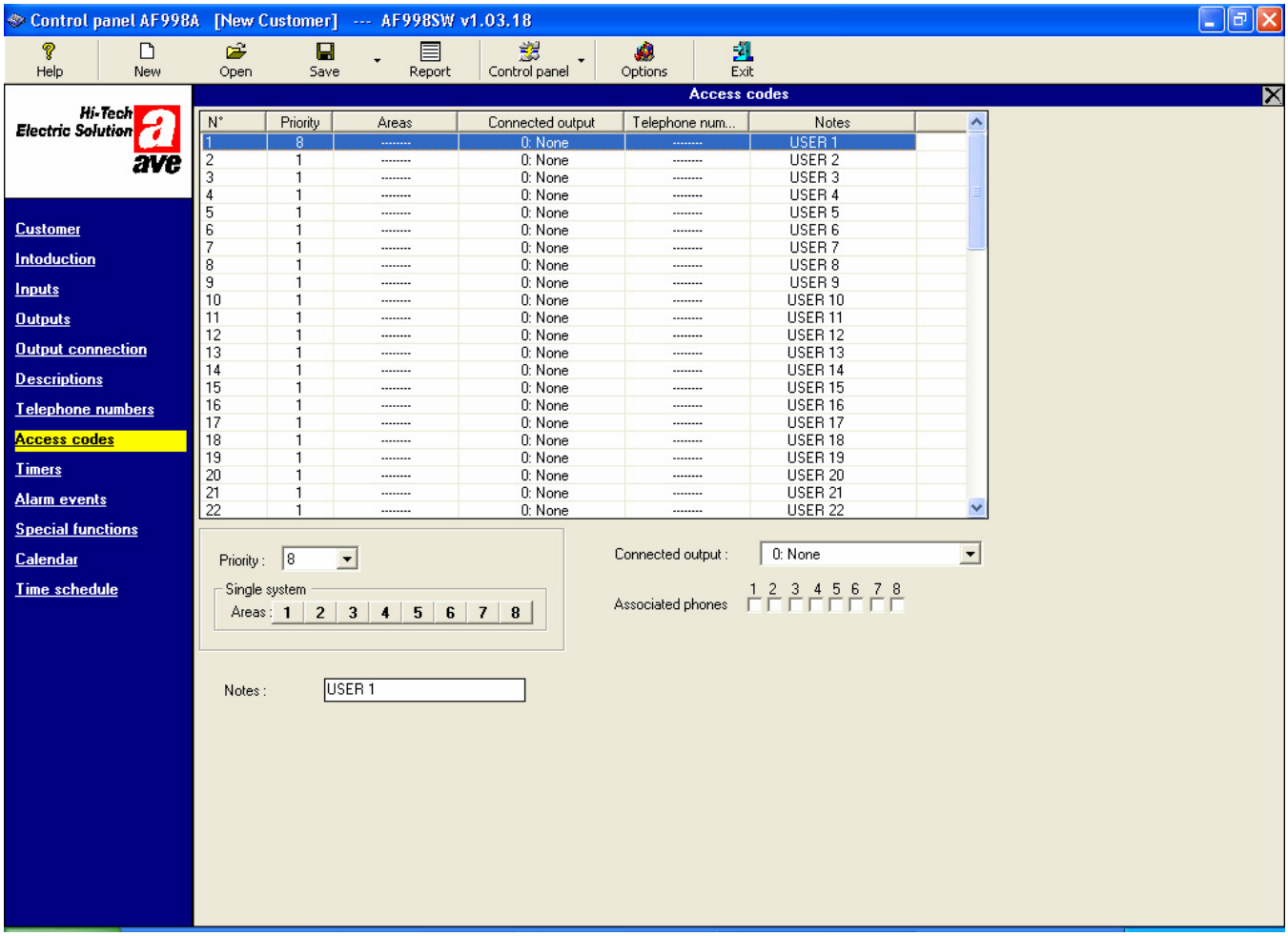
It is important to underline that resetting code function sets to the default values not only the codes but the code parameters as well. All the other control panel parameters are not modified.

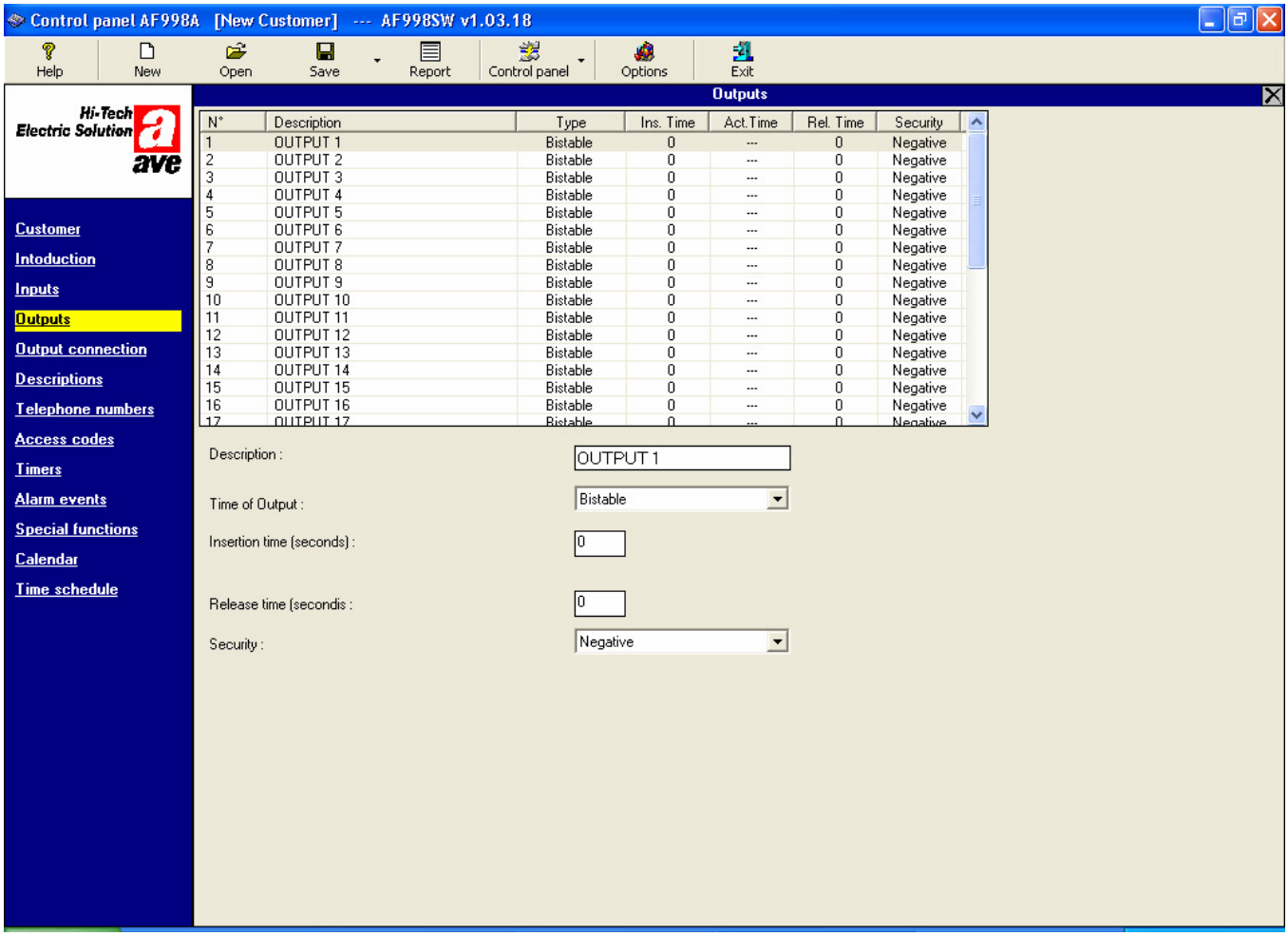
Default values of parameter

As an example, some screens of the programme AF998SW are shown, containing the main default parameters (for a general view consult the programme directly).






Control panel AF998A [New Customer] --- AF998SW v1.03.18
Help
New
Open
Save
Report
Control panel
Options
Exit
Hi-Tech Electric Solution
ave
Customer
Intoduction
Inputs
Outputs
Output connection
Descriptions
Telephone numbers
Access codes
Timers
Alarm events
Special functions
Calendar
Time schedule
Access codes
N° Priority Areas Connected output Telephone num... Notes
1 8 -------- 0: None -------- USER 1
2 1 -------- 0: None -------- USER 2
3 1 -------- 0: None -------- USER 3
4 1 -------- 0: None -------- USER 4
5 1 -------- 0: None -------- USER 5
6 1 -------- 0: None -------- USER 6
7 1 -------- 0: None -------- USER 7
8 1 -------- 0: None -------- USER 8
9 1 -------- 0: None -------- USER 9
10 1 -------- 0: None -------- USER 10
11 1 -------- 0: None -------- USER 11
12 1 -------- 0: None -------- USER 12
13 1 -------- 0: None -------- USER 13
14 1 -------- 0: None -------- USER 14
15 1 -------- 0: None -------- USER 15
16 1 -------- 0: None -------- USER 16
17 1 -------- 0: None -------- USER 17
18 1 -------- 0: None -------- USER 18
19 1 -------- 0: None -------- USER 19
20 1 -------- 0: None -------- USER 20
21 1 -------- 0: None -------- USER 21
22 1 -------- 0: None -------- USER 22
Priority : 8
Single system
Areas : 1 2 3 4 5 6 7 8
Connected output : 0: None
Associated phones 1 2 3 4 5 6 7 8
Notes : USER 1


Control panel AF998A [New Customer] --- AF998SW v1.03.18
Help
New
Open
Save
Report
Control panel
Options
Exit
Hi-Tech Electric Solution
ave
Customer
Intoduction
Inputs
Outputs
Output connection
Descriptions
Telephone numbers
Access codes
Timers
Alarm events
Special functions
Calendar
Time schedule
Outputs
N° Description Type Ins. Time Act.Time Rel. Time Security
1 OUTPUT 1 Bistable 0 --- 0 Negative
2 OUTPUT 2 Bistable 0 --- 0 Negative
3 OUTPUT 3 Bistable 0 --- 0 Negative
4 OUTPUT 4 Bistable 0 --- 0 Negative
5 OUTPUT 5 Bistable 0 --- 0 Negative
6 OUTPUT 6 Bistable 0 --- 0 Negative
7 OUTPUT 7 Bistable 0 --- 0 Negative
8 OUTPUT 8 Bistable 0 --- 0 Negative
9 OUTPUT 9 Bistable 0 --- 0 Negative
10 OUTPUT 10 Bistable 0 --- 0 Negative
11 OUTPUT 11 Bistable 0 --- 0 Negative
12 OUTPUT 12 Bistable 0 --- 0 Negative
13 OUTPUT 13 Bistable 0 --- 0 Negative
14 OUTPUT 14 Bistable 0 --- 0 Negative
15 OUTPUT 15 Bistable 0 --- 0 Negative
16 OUTPUT 16 Bistable 0 --- 0 Negative
Description : OUTPUT 1
Time of Output : Bistable
Insertion time (seconds) : 0
Release time (secondis : 0
Security : Negative

Resetting the default parameter values

To return to the parameter default values operate as follows:

1. digit a priority 8 user code (default 123456) on a AF983 keyboard already programmed and then enter the technical code (default 222222) to enter programming;
2. select by C and D keys the **DEFAULT PARAM** menu and confirm by the key *;
3. the display will show " **DEFAULT CONFIG.” * = YES # = NO** " ;
4. the key # will abandon the function while key * will launch the default configuration;
5. during the resetting of the factory parameter values, which lasts a few seconds, the display will show " **DEFAULT CONFIG. IN EXECUTION** ";
6. at the end your return to the function **21 DEFAULT PARAM.**

It is important to underline that Resetting parameters function doesn’t modify the codes but sets to the default values the code parameters.

PROGRAMMING THE CONTROL PANEL USING THE KEYBOARD

AF998EXP is fully programmable from the keyboard. Digit a priority 8 user code (default 123456) on an AF983 keyboard already programmed and then enter the technical code ((default 222222) to enter programming. Follow the directions reported on the display using the following keys to select the menu:

- * **Confirm**
- # **Escape**
- C **Forward**
- D **Back**

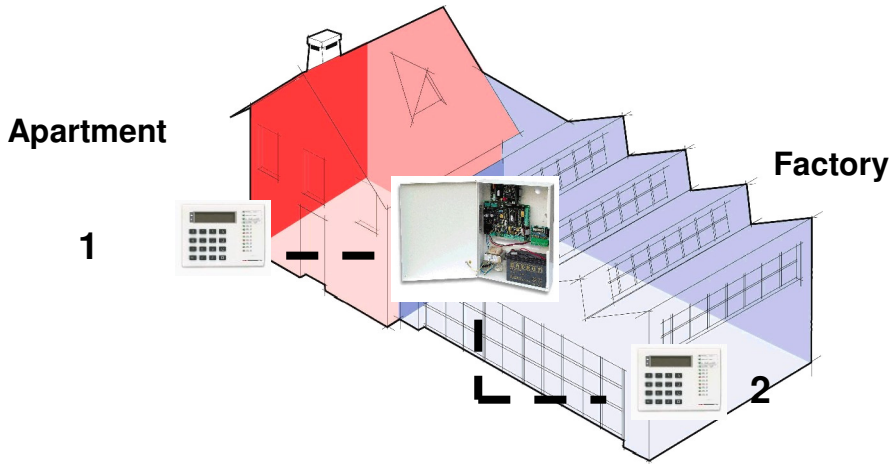
INSTALLATION EXAMPLES

The AF998EXP control panel, thanks to its versatility and programming software flexibility, allows solving numerous installation requirements. Some of the more common examples are shown below.

Factory with apartment

Let us consider a small factory with attached owner's apartment. It is possible to programme the system so that all the users of the apartment (factory and apartment owners) can access both the apartment and the factory premises. On the other hand factory employees can only access work premises.

As shown in the table "Programming inputs" the system consists of 7 areas which fall under 8 inputs (4 per apartment and 4 per factory). Each area has a keyboard of competence. All the users of the system have their own code that enables them to move only in the areas reserved for them. As shown in the table "Programming codes", users with code 1,2.3 (owners) can access all the areas. The user with code 4 (workshop manager) can only access areas 4 and 5, and the user with code 5 (warehouse manager) only areas 4 and 7. The table "Programming keyboards" lastly, indicates that the users of codes 1,2,3 while having the code that enables all the areas, if they wish to access areas 4,5,6,7 they must use keyboard 2.



Programming inputs				
Input	**Type**	**Description**	**Area of belonging**	
1	Delayed	Perimeter	1	Apartment
2	Entry route	Corridor	2	Apartment
3	Entry route	Stairs		
4	Entry route	Cellar	3	Apartment
5	Delayed	Perimeter	4	Factory
6	Entry route	Engine room	5	Factory
7	Entry route	Office	6	Factory
8	Entry route	Warehouse	7	Factory

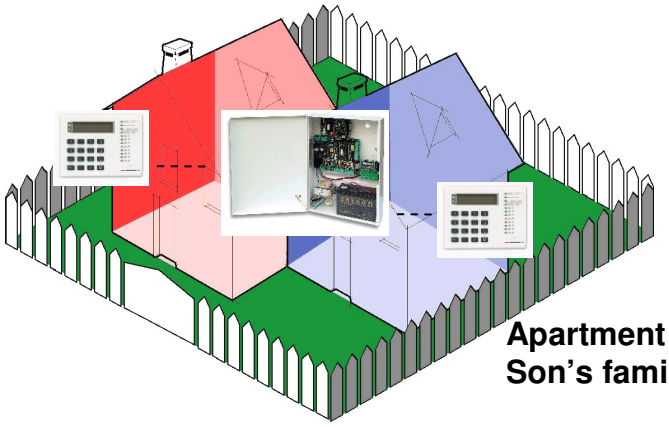
Programming codes												
Code Number	Code	Description	Priority	Areas managed							
				1	2	3	4	5	6	7	8
1	1516	Owner	5	x	x	x	x	x	x	x	
2	8120	Mother	5	x	x	x	x	x	x	x	
3	3748	Child	5	x	x	x	x	x	x	x	
4	3448	Workshop manager	5				x	x			
5	4456	Warehouse manager	5				x			x	
6											
7											
8											

Programming keyboards									
Keyboard	Areas managed								Location
	1	2	3	4	5	6	7	8	
1	x	x	x						Apartment
2				x	x	x	x		Factory
3									
4									
5									
6									
7									
8									

Two-family House

Let us consider a house divided into two for members of the same family (eg. home 1 parents, home 2 son's family). In this case the central station can be for common use and the inputs can be programmed as shown in the table "Programming inputs". Each user of the system, belonging to the same family, can access all the areas of the system, as shown in the table "Programming codes". Lastly as shown in the table "Programming keyboards" in order to access an apartment each user must necessarily use the keyboard linked to that apartment.

Apartment 1
Father's family



Apartment 2
Son's family

Programming inputs			
Physical input	**Type**	**Description**	**Area of belonging**
1	**Delayed**	Perimeter ap. 1 ground floor	**1**
2	**Instant**	Perimeter ap. 1 first floor	**2**
3	**Entry route**	Volumetric ap.1 ground floor	**3**
4	**Entry route**	Volumetric ap.1 first floor	**4**
5	**Delayed**	Perimeter ap. 2 ground floor	**5**
6	**Instant**	Perimeter ap. 2 first floor	**6**
7	**Entry route**	Volumetric ap.2 ground floor	**7**
8	**Entry route**	Volumetric ap.2 first floor	**8**

Programming codes										
code Number	**Code**	**Description**	**Priority**	**Areas managed**						
				1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	**1177**	**Father**	**5**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
2	**6739**	**Mother**	**5**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
3	**3426**	**Son**	**5**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
4	**6530**	**Son's Wife**	**5**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**

Programming keyboards									
Keyboard	**Areas managed**								**Location**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
1	**x**	**x**	**x**	**x**					**Apartment 1**
2					**x**	**x**	**x**	**x**	**Apartment 2**

Elettricità Evoluta
dal 1904
ave

Expandable and remote controlled Burglar alarm control panel

Cod. AF998EXP

User Manual

USER MANUAL

Introduction

The system can be managed from the keyboard AF983 and from the electronic key AF339 and the following conditions can be activated :

- **TOTAL INSERTION OF THE SYSTEM** (switching on the control panel)
- **PARTIAL INSERTION OF THE SYSTEM** (switching on with temporary exclusion of inputs)
- **PARTIAL DISCONNECTION OF THE SYSTEM** (partial switching off of the control panel)
- **TOTAL DISCONNECTION OF THE SYSTEM** (total disconnection of the control panel).

N.B.: when the system is totally connected, in normal conditions the LCD keyboard AF983 display shows the following wording :

1#2#3#4#5#6#7#8#

indicating the state of insertion of the system, i.e. which areas are active.

If there is the symbol # on the right of the number, the area is active and therefore the INPUTS ASSOCIATED THERETO ARE ACTIVE.

IF there is no symbol on the right of the number the corresponding area is not active and therefore THE INPUTS ASSOCIATED THERETO ARE NOT ACTIVE.

Example :

1#2#3 4#5#6#7#8 - In this case area 3 is disconnected and consequently all the inputs associated to this area **are not active.**

Inserting the system using keyboard AF983

When the central station is disconnected, the LCD keyboard AF983 can show two messages:

WAITING FOR COMMAND	If a valid code has been entered in less than a minute
ENTER CODE	In all other cases

To insert the system proceed as follows:

1. enter a valid USER CODE;

N.B.: if a code consists of 6 numbers, when the sixth number is entered the confirmation is automatic. If the code is less than 6 numbers (4 or 5), after the last number enter * to confirm.

2. Digiting "A", on the LCD display will make the following appear **1#2#3#4#5#6#7#8#** if the entered code can run all 8 areas; otherwise, in the case where, for example a USER CODE is entered to which only the areas 1 and 3 are assigned, the wording **1#2 3#4 5 6 7 8 will appear**. **In both cases the wording proposes to the user the total insertion of the areas of competence, insertion to be confirmed simply by pressing "A"**;
3. otherwise it is possible to change the condition that switches on the system by pressing, on the keyboard, the number corresponding with the area that must be inserted or disconnected (the area must belong to those assigned to the code**). After having chosen the areas to insert, confirm by pressing " A " once again**;
4. at this point the system will switch on and the LCD keyboard will show the wording **" OUTPUT TIME",** to show that the control panel is checking the status of the inputs for a correct switching on;
5. if all the inputs are close, the sound of the buzzer on the keyboard is continuous and the LED showing readiness is on. **If one or more inputs are open** they are shown in succession on the display, the buzzer on the keyboard emits an intermittent sound and the LED showing readiness flashes (SIGNALLING AN OPEN DOOR);
6. at the end of the exit time the buzzer falls silent and the display shows "1#2#3#4#5#6#7#8#", where the symbols # next to the number indicate the areas inserted.

N.B.: the opening of an input during the exit time can block this time, which will start running once again FROM THE BEGINNING when all the inputs will be closed once again (if the function FORCED SWITCHING ON in SPECIAL FUNCTIONS has not been chosen).

N.B.: if a USER CODE with priority 5 has been selected when the central station is inserted, the areas corresponding to the areas associated to the code are deactivated but the central station is not disconnected as the remaining areas remain active. Digiting the same USER CODE with priority 5 once again, followed by "A" pressed twice, will reactivate all the areas previously disconnected (or part thereof).

Entering an incorrect code 5 times in a row will stop the activity of the keyboards for about 1 minute.

Checking open inputs and temporary exclusion of inputs through keyboard AF983

Should it be necessary before switching on the system, to check which inputs are open, (including those defined as being memory type) proceed as follows:

1. enter a valid USER CODE;
2. press the key " **B "**: the LCD keyboard display shows all the open inputs belonging to the code that has been entered;
3. to end the viewing of the open inputs, press " # " , or wait about 40 seconds after which the procedure will end automatically.

If one wishes to **insert the system temporarily excluding one or more inputs**, proceed as follows:

1. enter a valid USER CODE with a suitable priority (5,6,7,8);
2. press " **A** "once **:** the display shows **1#2#3#4#5#6#7#8#;**
3. press " B " to enter the procedure to temporarily exclude inputs: the display shows **ING. 01 INSERTED**
4. with " C " and " D " select the number of the input that must be temporarily excluded when switching on (for example input 06);
5. press " *** "**: the display shows **ING. 06 EXCL. TIME;**
6. should an input be excluded involuntarily press " *** "** again to re-insert the input;
7. proceed, going from point 4 for the other inputs that must be temporarily excluded;
8. to exit from the temporary exclusion procedure press " **# ";**
9. at this point press " A " to insert the control panel.

N.B.: if the keyboard remains inactive for a time greater than approx. 1 minute during the various phases described, the procedure for the temporary exclusion of the inputs is automatically annulled and must be starter from the beginning.

The inputs temporarily excluded will remain in this state until the disconnection of the control panel, an operation that automatically resets the status of the inputs.

Disconnecting the system using the keyboard AF983

The control panel is disconnected by entering a valid code with priority 6 or greater; any alarms are silenced immediately and the status of the inputs temporarily excluded are reset.

If, in order to access the keyboard an input type DELAYED 1 or DELAYED 2 is used, the keyboard buzzer emits a continuous sound for the entire entry time, signalling that if the valid code is not entered correctly within this time, at the end an intruder alarm will be generated.

N.B.: a priority 5 code disconnects only the areas associated to it in combination with the areas associated with the keyboard from which it is entered; a code with priority 6 disconnects only the areas associated thereto independently from the areas associated to the keyboard from which it is entered.
Entering an incorrect code for five times consecutively will inhibit the activity of the keyboards for about one minute.

Inserting, disconnecting and partial inserting the system using the keyboard AF45380

- **Insertion:**
  Enter a valid code with priority 6 or greater, the keyboard confirms that the code entered is valid by emitting a "Beep" . Press the red button "A", three leds on board will light up, corresponding respectively with areas 1, 2 and 3. To insert all the areas assigned to the code entered press the red button "**A**".

- **Disconnection:**
  Enter a valid code with priority 6 or greater and press the red button "A" any alarms are immediately silenced, the inputs temporarily excluded are reset and the system disconnected.

- **Partial insertion:**
  Enter a valid code with priority 6 or greater, the keyboard confirms the entered code is valid by emitting a "Beep" . Press the red button "**A**", three leds on board light up, corresponding respectively with the areas **1**, **2** and **3** which can be shut off by pressing buttons **1**, **2** and **3** which will switch off or switch on the relative led. To insert the shut off areas press the red button "**A**".

Inserting, disconnecting and partial inserting the system using proximity key AF339

If the AF45343 decoder is programmed in the mode "**BOUND TO CODE**", it is automatically enabled for all the areas and shows the status of the first three areas run by the code.

The key works in the following way:

KEY	FUNCTION
Red	Total insertion of all the areas managed by the code (on/off step by step mode)
Green	Insertion 1st area managed by the code
Black	Insertion 2nd area managed by the code
Black/red	Insertion 3rd area managed by the code

During exit time the three leds of the decoder will view the state of the first three areas of competence of itself; selecting the option "STATUS OF THE AREAS" , in the special functions menù, this condition remains even after the exit time has ended.

Selecting the option "STATUS OF THE SYSTEM", once the output time has ended the leds will view the status of the system as shown below:

LED	ON	FLASHING	OFF
Green	System totally on	System partially inserted	System disconnected
Yellow	Faulty Feed Voltage	-	-
Red	-	Alarm	-

Silencing the alarms

An alarm can be silenced by entering, on a keyboard, a USER CODE with priority 3 or greater, or inserting the electronic key; the acoustic signals stop immediately, **while telephone communication follows what was programmed in the telephone options**.

On the basis of the priority of the code there can be different results:

CODE PRIORITY	STATUS OF CONTROL PANEL	ACTIONS AFTER ENTERING THE CODE
3 , 4	**Inserted/ Disconnected**	Alarms silenced. The status of the control panel does not change
5,6	**Inserted**	Alarms silenced. Disconnects the areas associated to the code
5,6	**Disconnected**	Alarms silenced. The status of the control panel does not change
7 , 8	**Inserted**	Alarms silenced. The control panel is disconnected
7 , 8	**Disconnected**	Alarms silenced. The status of the control panel does not change

Depending on the nature of the alarm there can be different situations where, despite the introduction of a code with suitable priority the alarm does not stop, possible situations are listed below:

Opening of the control panel tamper circuit	Active alarm with either the control panel inserted or disconnected, determines a 24-hour-type alarm with: • activation of the 24-hour output (+ general alarm output if programmed); • intermittent sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. Despite entering a code with suitable priority the alarm signals start again immediately if the control panel tamper circuit is not closed. The events memory records the conditions of TAMP. ALARM and RESET TAMP with respective date and time.
Opening of the tamper circuit of an input with double balancing	Active alarm with either the control panel inserted or disconnected, determines a 24-hour-type alarm with: • activation of the 24-hour output (+ general alarm output if programmed); • continuous sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. When a code with suitable priority code is entered the alarm signals stop even if the tamper circuit of the circuit has not been closed. When the system is switched on, if the tamper circuit of the input is still open, an alarm signal will be given once again.
Opening of a fire-type input	Active alarm with either the control panel inserted or disconnected, determines: • activation of the 24-hour output (+ general alarm output if programmed); • intermittent sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. When a code with suitable priority code is entered the alarm signals stop even if the circuit has not been closed.
Opening of an aid alarm-type input	Active alarm with either the control panel inserted or disconnected, determines: • intermittent sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. When a code with suitable priority code is entered the alarm signals stop even if the circuit has not been closed.
Opening of an aggression-type input	Active alarm with either the control panel inserted or disconnected, determines: • intermittent sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. When a code with suitable priority code is entered the alarm signals stop even if the circuit has not been closed.
Opening of a silent alarm-type input	Active alarm with either the control panel inserted or disconnected, determines: • activation of the telephone call. When a code with suitable priority code is entered, the telephone alarm signal stops according to what has been programmed in the telephone options.

Opening of an instanteous, delayed or entry route-type input	Active alarm with the control panel inserted, determines: • continuous sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. When a code with suitable priority code is entered the alarm signals stop even if the circuit has not been closed.
Loss of communication with expansion modules	With the remote input and output modules, there is a 24-hour-type alarm (+ general alarm output if programmed) with: • continuous sound of the buzzer from the keyboard; • red alarm LED on the keyboard lights up. When a code with suitable priority code is entered the alarm signals resume if communication with the remote modules has not been reset correctly. In the events memory the conditions of TAMP.MOD.INP NN and TAMP.MOD.OUT. NN are recorded with the respective date and time.

N.B.: Entering an incorrect code for five times consecutively will inhibit the activity of the keyboards for about one minute even at maximum priority levels. If an alarm is activated, it will be possible to silence it only at the end of this period.

Viewing the last events

In the case of signalling of alarm or malfunction, it is possible to see the relative events immediately on the LCD display operating as follows:

1. enter a valid code with priority 2 or greater;
2. then press " C " on the keyboard;
3. the display will start to show the events (only description and possible comment);
4. to end just press "***#".***

Modifying the USER CODE

The following procedure is valid if the wording "WAITING FOR COMMAND" appears on the keyboard and allows the relative user code to be changed:

1. after having entered a valid code, the display will show "WAITING FOR COMMAND ";
2. enter code 000000, the display will show the wording 'CODE: ' ;
3. enter your USER CODE: if the code is valid the display will show " NEW : ";
4. enter the new code that must be set, (each code can consist of 4, 5, or 6 numbers) and confirm with *****
5. the following wording can appear on the LCD display :

CODE ACCEPTED	Indicates that the entered code has been accepted and replaced the previous one
CODE INCORRECT	Indicates that the procedure followed is correct but the code has not been changed because there is another code with the same sequence of numbers or the code has not been accepted because the procedure has not been undertaken correctly

N.B.: if the code has 6 numbers, when the sixth number is entered confirmation is automatic. If the code has less than 6 numbers (4 or 5), after the last number press * to confirm.

APPENDIX - Internal view and connections